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# The outlook for emerging market stocks in a lower-growth world

Vanguard research

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**Executive summary.** Investors making asset allocation decisions have expressed concern lately about the prospect of muted economic growth globally, and particularly in emerging markets, where growth has slowed from its previous fast pace. In a 2010 research paper, we cautioned equity investors that these markets should not be expected to outperform their developed counterparts solely on the basis of higher anticipated economic growth.<sup>1</sup> Indeed, in the three years through June 2013, the annualized return of the FTSE Emerging Index trailed that of the FTSE Developed Index by more than ten percentage points (+3.3% versus +14.1%), and cash began flowing out of emerging market stock funds.

Now, in an update to our previous work, we repeat our caution but from the other side: Just as high growth expectations don't imply markets will outperform, lower growth expectations don't imply they will underperform.

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<sup>1</sup> This paper is an updated version of a 2010 Vanguard paper titled *Investing in Emerging Markets: Evaluating the Allure of Rapid Economic Growth*, by Joseph Davis, Roger Aliaga-Díaz, C. William Cole, and Julieann Shanahan.

We have revisited our analyses and still find that the average cross-country correlation between long-run GDP growth and long-run stock returns has been effectively *zero*. Four factors explain this seemingly counterintuitive result:

- Consensus growth expectations are already priced into equity valuations.
- GDP growth may not be a good proxy for earnings growth in a world of multinational companies.
- Much of the market capitalization growth in emerging markets comes from share issuance rather than rising stock prices.
- *Valuation*, or the price paid for earnings growth, is a more important driver of returns than economic growth.

Our research suggests that the long-run outlook for emerging markets could still be quite positive, even if their economies grow more slowly than in the past. Further, we believe these markets have an important role in diversified equity portfolios.

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### A lower-growth world

In the aftermath of the global recession of 2008–2009, the economies of most developed markets have experienced at best a slow recovery, with some countries slipping into another recession. The United States, Japan, and much of Europe are struggling with lackluster growth, questions about fiscal sustainability, and lingering debt problems in the private sector. At the same time, emerging market countries such as China, having weathered the global recession fairly well, have seen a deceleration in growth over the past few years.

Although the recent growth rates in emerging markets have been disappointing to investors, it's important to keep in mind that by developed market standards, most of these economies have still been expanding quite rapidly. And from a longer-term perspective, their growth over the past decade has been excellent by any standard.

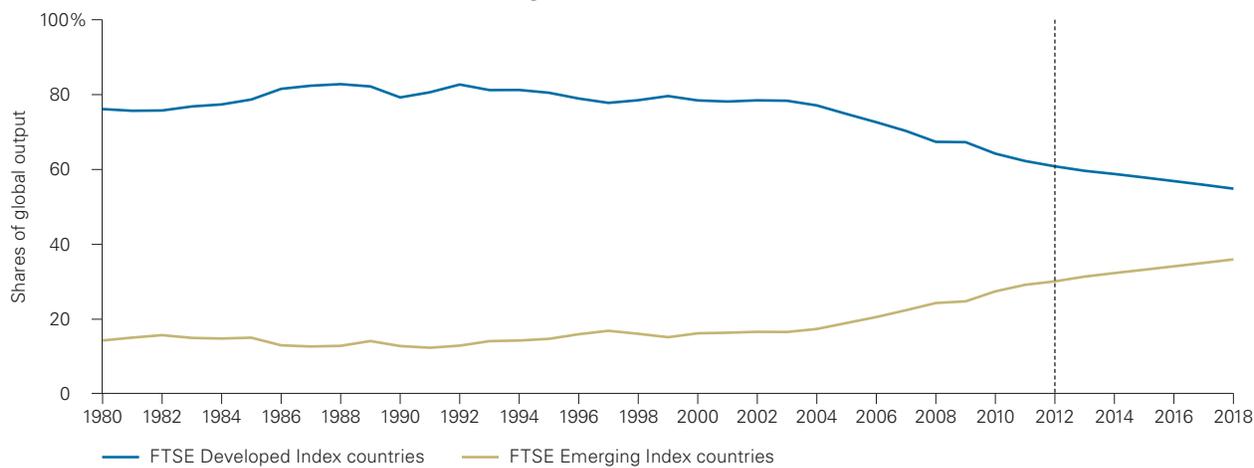
These trends are reflected in **Figure 1**: Emerging markets are beginning to catch up with developed markets in their share of global output, and the gap is projected to narrow further in the near future.

*Notes on risk: All investing is subject to risk, including possible loss of principal. 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.*

*There is no guarantee that any particular asset allocation or mix of funds will meet your investment objectives or provide you with a given level of income. Diversification does not ensure a profit or protect against a loss in a declining market. Note that the performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.*

**Figure 1.** A long-term trend of economic convergence

Share of world GDP, 1980–2012, and forecast through 2018



Notes: The figure displays shares of global GDP in U.S. dollar terms. We aggregated the shares for developed and emerging markets based on membership in the FTSE Developed and Emerging Indexes as of December 2012. The values for 2013–2018 represent forecasts from the International Monetary Fund (IMF). Source: Vanguard, based on data from the IMF’s April 2013 World Economic Outlook database and FTSE.

The figure is representative of the convergence in the shares of the United States, the largest developed market, and China, the largest of the emerging markets. As documented in previous Vanguard research, the so-called BRIC economies of Brazil, Russia, India, and China are quickly approaching the United States in terms of their overall ability to drive world economic growth (Davis and Aliaga-Díaz, 2009).

Given this dichotomy—a long-term trend of economic convergence but a recent slowdown in growth—many investors may wonder exactly what role emerging markets should be playing in their portfolios.<sup>2</sup> In a generally low-growth world, are emerging markets the right place to be for positive returns, given their higher trend growth? Or do the recent economic slowdown and poor market

performance point to future disappointments? Just what is the relationship between economic growth and equity market returns, and is it something that investors need to consider in setting an allocation across regions?

We argue that the links between growth and returns are more nuanced than many may appreciate. The intent of this paper is to delineate the four variables that *should* be considered when anticipating future equity returns. In doing so, we will reaffirm that growth in gross domestic product, or GDP, is at best weakly related to long-term equity market returns. Ultimately, we believe that positive returns are possible in both low- and high-growth environments, and that investors should not make asset allocation decisions solely on the basis of expected economic growth.

<sup>2</sup> Unless otherwise noted, the terms “emerging markets” and “developed markets” in this paper refer to the groups of countries currently represented in the All World series of the FTSE Emerging Index and FTSE Developed Index, respectively. Although individual market returns recorded by various index providers tend to be very similar, providers can differ in the way they classify countries. Notably, FTSE considers South Korea to be a developed market, while some others classify it as emerging. Either way, the classification of South Korea has no meaningful impact on our results in this paper.

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

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. Earnings play a key role in establishing expectations for future equity returns, particularly when linked to prices, as discussed in Davis et al. (2012). And anyone who regularly follows the financial markets probably has the sense that economic data releases can drive market performance.

Yet, in **Figure 2**, when we examine historical long-run equity market returns and their relation to economic growth (as measured by real GDP growth), we find a weak correlation across the 46 countries that make up what many would consider to be the investable global equity market.<sup>3</sup> At 4.0% per year, the average real equity market return for the countries with the three highest GDP growth rates was slightly below the 4.2% average return for the countries with the three lowest GDP growth rates, despite the considerable difference in those rates (8.0% a year versus 1.6%, on average). It is clear that the correlation between these two variables is weak.

These results may not quite line up with investor intuition, as well as with some particular outcomes in history. For example, the recent decade shows emerging markets outperforming developed markets in terms of both market performance and economic growth.<sup>4</sup> How does this result fit with our findings in Figure 2?

The answer is *not* that economic growth is irrelevant for stock market investors. Rather, it requires a recognition that the relationship between the two is far more subtle than many appreciate and that other influences are at work. When thinking about the relationship between growth and returns, investors should be mindful of four factors:

1. The difference between expected and actual GDP growth.
2. The importance of global capital claims on a country's GDP growth.
3. The process of "financial deepening"—or expansion of the capital markets—within fast-growing emerging countries.
4. And, most important, the fact that market valuations reflect the *price paid* for earnings growth.

We will discuss each factor in turn to shed light on the findings in Figure 2. When viewed in the context of these four factors, the experience of the past three years, in which emerging markets outpaced the *growth* of developed markets without outpacing their *returns*, begins to make more sense.

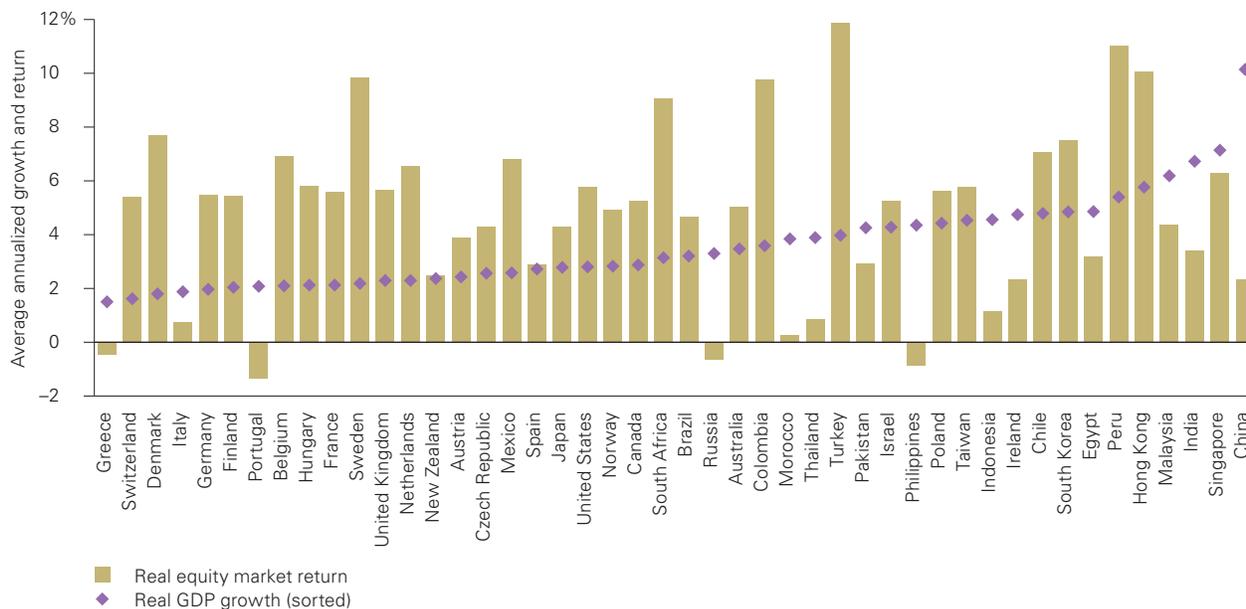
<sup>3</sup> These markets reflect every member of the FTSE All World index (excluding the United Arab Emirates because of a lack of history). We repeated this analysis using per capita GDP and also examined the data in U.S. dollar terms. The results are very similar, with regression slopes that are not statistically significantly different from 0 and R-squared values below 0.05.

<sup>4</sup> Over the ten years ended December 31, 2012, the countries in the FTSE Emerging Index grew at an annualized rate of 6.3% in aggregate, with equity market returns averaging 13.0% a year (in local-currency terms). Over the same period, the countries in the FTSE Developed Index grew at an annualized pace of 1.4% in aggregate, with equity market returns averaging 4.2% a year.

**Figure 2.** GDP growth has a weak relationship with stock returns over the long term

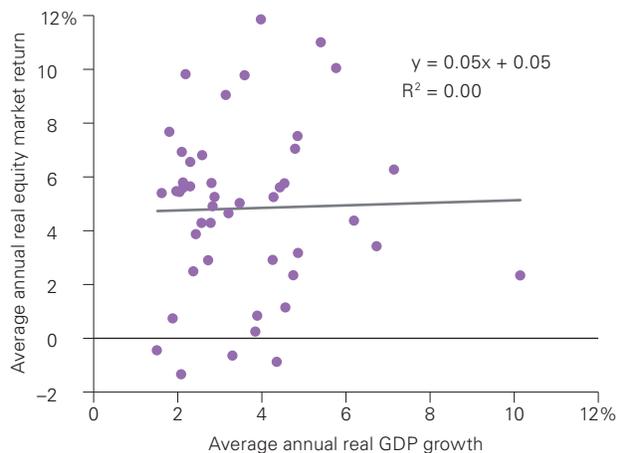
**a. Comparison of annualized real GDP growth and real stock returns across countries**

Country data start when available from 1970 on and extend through 2012



**b. Scatter plot of annualized real GDP growth versus real stock returns across countries**

Country data start when available from 1970 on and extend through 2012



Notes: The figures display each country's average annualized real GDP growth rate along with that country's average annualized real stock return. We include all members of the FTSE All World Index (except the United Arab Emirates, for a lack of return history). The period covered begins in 1970, with the starting point for each country depending on the availability of both returns and GDP data (most developed markets have data from 1970 onward, and most emerging markets have data from 1988 onward). Real growth rates are computed using data from the IMF's World Economic Outlook database (for data prior to 1980, we use the April 2004 database; otherwise we use the April 2013 database). Return data are based on MSCI country indexes spliced with FTSE indexes once the latter are available. Both growth and return data are in real local terms, with the index returns deflated using the GDP deflator from the IMF databases. The 95% confidence interval for the cross-sectional regression slope of returns on GDP growth is -0.51 to 0.61, with an R-squared of 0.00.

Source: Vanguard, based on data from the IMF, MSCI, and FTSE.

## Markets price in expectations for currency movements, too

In Figure 2, we showed that there is effectively zero correlation between a country's economic growth and that country's long-run stock market return. Something very similar turns out to be true of currency factors: We find that a country's currency movement does not impact relative long-term market returns, meaning that the expected appreciation (or depreciation) of a currency should not influence an investor's equity allocation.

In the charts on page 7, we examine the long-term relationship between currency movement and equity returns. Chart **A** compares countries' currency returns relative to the U.S. dollar to their equity market returns, with each market measured in its home currency (in other words, we use the return that an investor domiciled in that country would earn). The results show a moderately negative relationship ( $R\text{-squared} = 0.70$ ), meaning that an appreciating currency is associated with low local equity returns. This effect can largely be explained by inflation differentials. Markets with lower trend inflation rates have tended to have lower local nominal asset returns, because expected inflation is reflected in asset prices. At the same time, over the long run, currency movement responds to inflation differences across markets as the "law of one price" takes hold, meaning that markets with below-average inflation will tend to have appreciating currencies, and vice versa.

All of this has implications for global investors, because they will realize a combination of both the local market return and the currency return (assuming the investment is unhedged). In Chart **B**, we repeat this analysis, this time comparing currency returns to market returns measured in a common currency (the U.S. dollar) to reflect the return an investor outside that market would actually earn.<sup>I</sup> The results demonstrate that there is a relatively weak relationship ( $R\text{-squared} = 0.18$ ) between currency movement and the combined market and currency return that an international investor would earn. If anything, the relationship goes the "wrong way": Currency appreciation has resulted in lower realized returns for international investors, as local equity market returns have more than offset the currency return.<sup>II</sup>

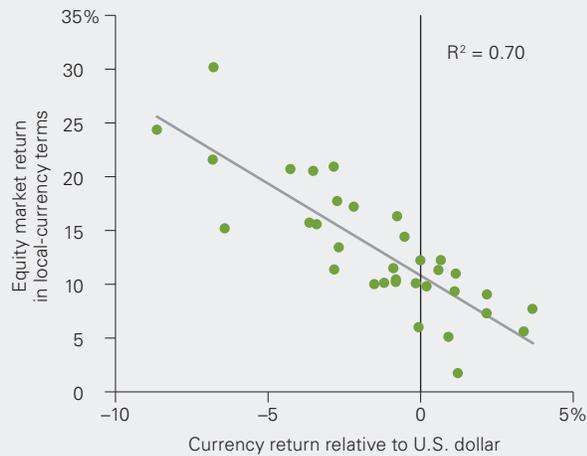
Essentially, it is difficult for an international investor to benefit from currency return, because local markets tend to offset this return, effectively equalizing returns across markets for any international investor. Said another way, because currency movement is priced in by local equity markets, it should not be expected to account for return differentials across countries.

I We use the U.S. dollar in this analysis; however, these results can be generalized across any market. If we were to change the base currency in the analysis, the result would be to shift all of the points by the same amount (the new currency's return versus the U.S. dollar), maintaining the same relationships shown in the charts.

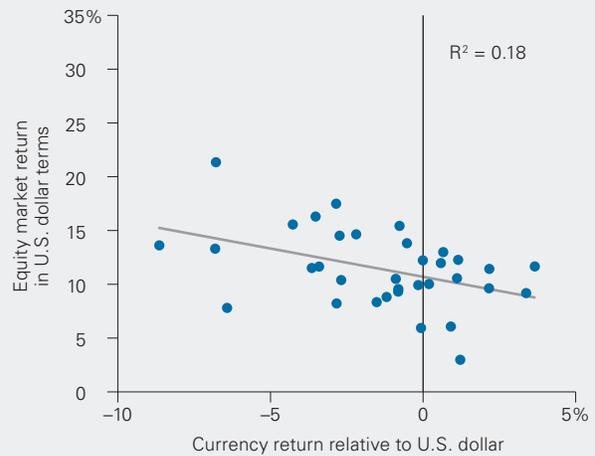
II When we limit the examination to developed markets, the  $R\text{-squared}$  is 0.0.

Local returns offset currency returns . . . so there is no benefit to an international investor

A. Currency return versus market return in local currencies



B. Currency return versus market return in U.S. dollars



Notes: Chart A displays each country's currency return relative to the U.S. dollar along with that country's equity market return expressed in local currency. Chart B displays both the currency return and the equity market return in U.S. dollar terms for each country. We use all available history for each country, depending upon when the relevant data begins during the period 1970–2012. Returns are based on MSCI indexes spliced with FTSE indexes once the latter become available. Currency returns are inferred from the difference between each market's return in local terms versus dollar terms. We include all countries in the FTSE All World universe, with the euro-area countries combined into one capitalization-weighted market. Turkey and Brazil are excluded as outliers, although this exclusion does not affect the direction or magnitude of the relationship in either figure.

Source: Vanguard, based on data from MSCI and FTSE.

**Factor #1: Economic surprises matter; expectations are already priced in**

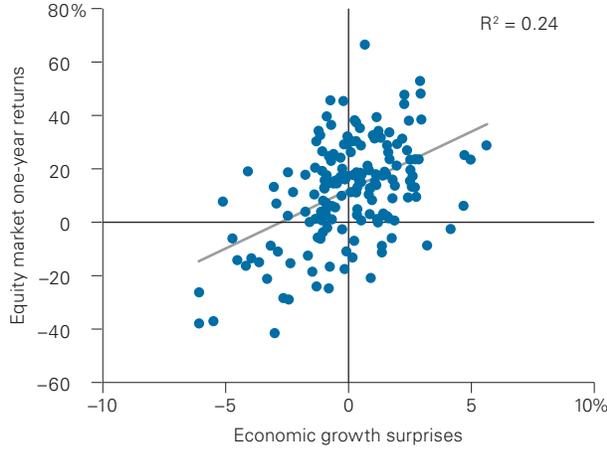
It is critical to distinguish between *expected* economic growth and the *actual* growth relative to expectations—i.e., the growth surprise. As Davis (2008) discusses in detail, because markets price in anticipated economic outcomes, it is not the expected growth that matters for returns.<sup>5</sup> Rather, it is the *surprise* growth—actual growth relative to the prior expectation—that can have an immediate and sometimes profound influence on stock returns.

For example, if the consensus view had been that the Chinese economy would grow at 8% per year, and actual growth was reported at 10%, the 2-percentage-point difference would represent a positive surprise that should quickly drive up stock prices. Alternatively, if Chinese growth was reported at 6%, the surprise would be negative and stock prices probably would fall, despite the fact that 6% might be considered an excellent growth rate for a typical developed market.

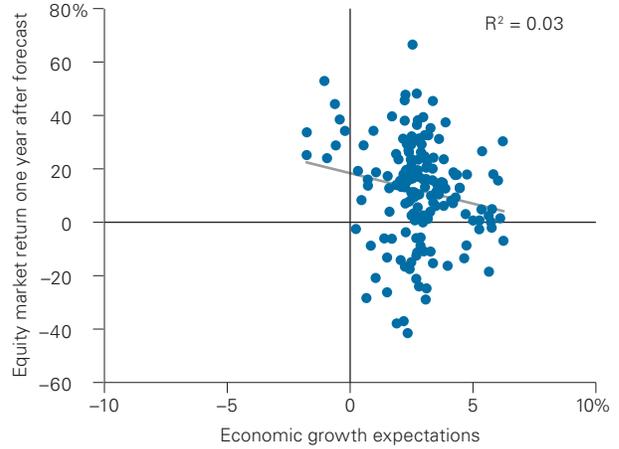
<sup>5</sup> The paper examines the relationship between macroeconomic expectations (based on both professional forecaster surveys and financial market indicators) and the subsequent near-term performance of the U.S. stock market. It shows that the consensus view of future macroeconomic conditions has 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 (tending to anticipate economic shifts rather than lag them), and that can be quite volatile in the short run.

**Figure 3.** Economic growth surprises matter; expectations are priced in

**a. U.S. economic growth surprises versus equity market returns, 1970–2012**



**b. U.S. consensus economic growth expectations versus equity market returns, 1970–2012**



Notes: Economic growth expectations are defined as the one-year-ahead median real GDP forecast from the Philadelphia Federal Reserve Bank's Survey of Professional Forecasters. Growth surprises are defined as the actual change relative to that expectation. Equity market returns are represented by the Dow Jones U.S. Total Stock Market Index (formerly known as the Dow Jones Wilshire 5000 Index) through April 22, 2005, and the MSCI US Broad Market Index thereafter.

Source: Vanguard, based on data from the Philadelphia Fed, the U.S. Bureau of Economic Analysis, Dow Jones, and MSCI.

Switching to the U.S. market as an example, **Figure 3** reveals that economic surprises can be an important factor in explaining short-term market fluctuations. In Figure 3a, we compare market performance with growth surprises, which are defined as the difference between actual growth outcomes and the consensus expectations that existed one year earlier. We find that these growth surprises explain 24% of the variation in annual equity returns, with a statistically significant positive relationship. In Figure 3b, we show the relationship between the expectations themselves—the same one-year-ahead consensus forecasts—and the subsequent annual stock market returns. Clearly, growth expectations do not forecast market returns; the R-squared value here is below 0.05. This result

underscores the reality that growth expectations are reflected in stock prices in real time, and are thus irrelevant to future equity returns.

In summary, a strong link exists between the year-to-year volatility observed in equity market returns and economic growth surprises, while the expectations preceding the surprises bear little relationship to future returns. This means that the relevant metric for anticipating equity returns is not growth per se, it is the growth surprise.<sup>6</sup> So for investors to benefit from portfolio tilts based on economic outcomes, they would need to correctly forecast growth surprises, which by definition is very difficult to do.

<sup>6</sup> Of course, such growth surprises are themselves quickly incorporated into stock prices. Thus they do not typically show up in the longer-term relationships between GDP growth and stock returns, as demonstrated in Figure 2. For this reason, growth surprises are effectively irrelevant for long-term equity investors.

**Factor #2: Global capital claims may translate economic growth into earnings outside of the region**

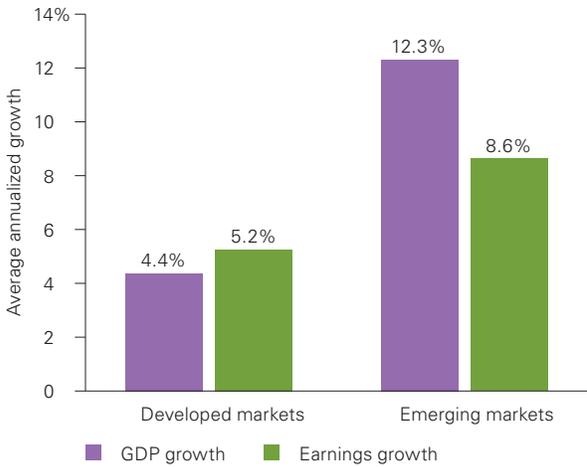
A second factor that helps to disconnect economic growth from equity returns is the role that multinationals play in driving a country's GDP growth. One need ask: Who benefits from the growth a country is experiencing?

The premise that GDP growth should equate to the earnings growth that drives market returns assumes that an economy is closed off from the world—no imports, no exports, and no cross-border capital flows. Because nearly all developed and emerging market economies are at least partially open, this assumption is incorrect. In reality, developed market multinationals are producing and capturing some of the economic growth from emerging market economies, creating a wedge between national economic statistics and country-level corporate earnings.<sup>7,8</sup>

A significant portion of profit growth for developed market multinational companies is driven by GDP growth in the emerging markets where they operate. In **Figure 4**, we compare growth rates in earnings and GDP across developed and emerging markets, demonstrating that earnings growth is more aligned between the two categories than the economic statistics might suggest. This is an important reminder not to view GDP growth as a proxy for corporate earnings growth in any stock market.

**Figure 4.** GDP is a poor proxy for equity market earnings

**GDP growth versus earnings growth, 1999–2012**



Notes: The figure shows the average annualized growth in earnings and GDP in nominal U.S. dollar terms. The countries represented are the members of the FTSE Developed and FTSE Emerging Indexes as of December 2012. GDP growth is based on aggregated data for those countries as reported in the IMF's April 2013 World Economic Outlook database. Earnings growth is inferred from the price index and P/E ratios of the same indexes.

Source: Vanguard, based on data from the IMF and FTSE.

7 In addition, in some markets, investors may not even have access to the companies or industries that are responsible for economic growth because of government or private control.

8 GNP, gross national product—which measures the output produced by a country's residents regardless of location—may be closer to earnings growth, since it would at least partially account for multinational profits coming from outside the country. However, because of concerns regarding the availability of cross-country GNP data, and given the familiarity of GDP, we use GDP throughout our analysis.

## Positive returns with zero growth? A historical precedent

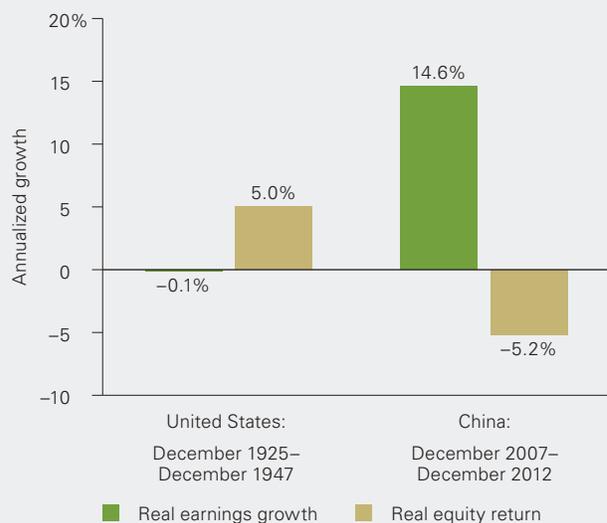
In our discussion about the lack of relationship between economic growth and stock returns, we noted that earnings growth, not economic growth, is a more relevant metric for investors to consider. Yet even when focusing on earnings, we can point to a rather extreme example in which equities produced positive returns with 0% growth in earnings. It demonstrates that earnings need not grow at all for stocks to be a viable long-term investment capable of positive returns.

In this example, we can view equities as something like a perpetuity—if there truly is 0% earnings *growth* going forward, investors still receive the *flow* of earnings each year (through either dividends, share repurchases, or reinvestment that increases company value).

As the chart to the right shows, this situation has occurred in United States history. The chart shows real corporate earnings per share for the constituent companies of the S&P 500 Index. Although these companies' earnings per share fluctuated throughout the period, they ended 1947 at nearly the same inflation-adjusted level where they had started more than 20 years earlier, in 1925. So the country experienced *two consecutive* "lost decades" in earnings, with effectively 0% real earnings growth on average. Although that might seem a poor environment for stock returns, in fact over those 22 years the broad U.S. equity market returned an annualized, inflation-adjusted average of 5% per year. It did so despite near-0% earnings growth, the Great Depression, and World War II!

To look at this from the opposite angle: Markets have exhibited periods of very strong earnings growth without similarly strong returns. The experience of China since the beginning of the global recession in 2007 is an excellent example. From the end of 2007 to the end of 2012, real Chinese earnings grew at a 14.6% annual pace, and yet the real return that investors earned was negative.

Real equity returns versus earnings growth in the U.S. and China

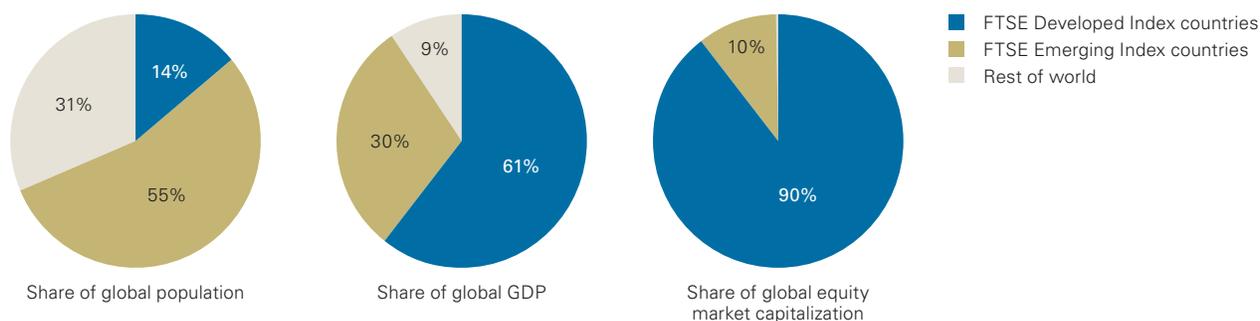


Notes: U.S. earnings per share and inflation are from Robert Shiller's website, having originally appeared in his book *Irrational Exuberance* (2000), and represent the stocks in the S&P 500 Index. U.S. return is represented by the S&P 90 Index, as the S&P 500 did not exist in the period covered. Because it is impermissible for us to calculate a back-tested return for the S&P 500 using data from its constituents, our earnings universe does not match our returns universe; however, this does not affect our results. For example, the return inferred from Shiller's data, which reflects the full back-tested S&P 500 Index (available at [www.econ.yale.edu/~shiller/data.htm](http://www.econ.yale.edu/~shiller/data.htm)), produces a very similar result. Chinese earnings and return data are based on the FTSE China Index in local-currency terms. Chinese inflation data are from China's National Bureau of Statistics.

Source: Vanguard, using data from the sources named in the note above.

The reason for these counterintuitive outcomes is the idea we've discussed throughout this paper: Equity returns are not based on growth. Indeed, there can be very long periods of weak growth (or even a decline) in earnings that do not necessarily result in negative market returns. As long as expectations reasonably match reality, equity investors can expect to be compensated for the risks they bear in supplying capital to corporations.

**Figure 5.** Will emerging economies' market capitalization catch up to their share of world GDP and population?



Notes: Data are as of year-end 2012. Global population data are from the IMF's April 2013 World Economic Outlook database, except for the total global estimate used to infer the "Rest of world" category, which is from the U.S. Census Bureau. GDP is measured in U.S. dollar terms using data from the same IMF database. Equity market capitalization is the December 2012 value for the FTSE Developed and FTSE Emerging Indexes, with the "Rest of world" category defined as the FTSE Frontier Index.

Source: Vanguard calculations, based on data from the IMF, the U.S. Census Bureau, and FTSE.

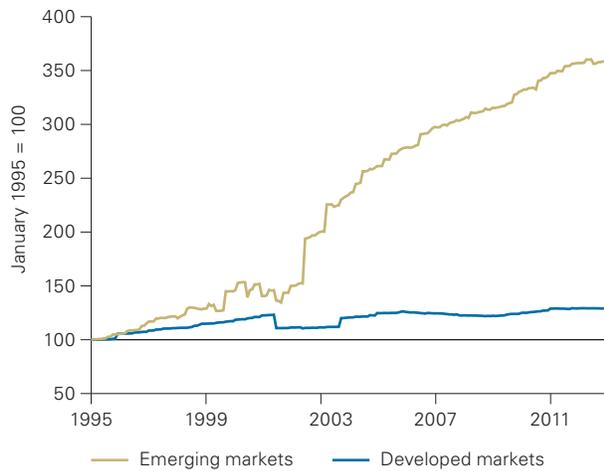
### Factor #3: Financial deepening, not just returns, drives market-cap growth

Economic growth, as measured by GDP, comes from two sources—population growth and productivity. Therefore, a change in either of these will impact GDP growth, which many assume ultimately translates into market-capitalization growth. Because emerging market nations account for the majority of the world's population, a common assumption is that these markets will eventually "catch up" with the productivity levels of developed markets, thus bringing their share of global GDP into line with their share of population. If that happens, then one could conclude that their share of global market capitalization should come into line as well.

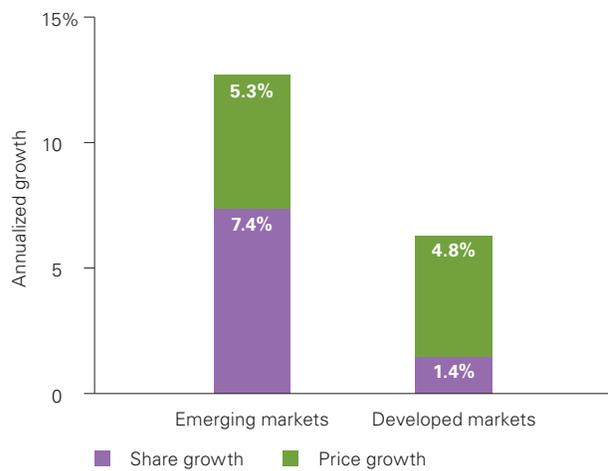
Although there are caveats to this story, and the progression is not a sure thing, it does seem reasonable that, over the long run, the shares of population, GDP, and market cap shown in **Figure 5** should converge. This might seem to suggest that high returns will result from market-cap growth in emerging markets—but it is important to note that market cap can increase not only through price appreciation but also through share issuance. Growth in market cap can occur when companies that are already public increase productivity levels and thereby contribute to share-price appreciation, or when companies contributing to GDP growth go to public markets to raise capital. As more companies and investors participate in the capital markets—a process known as financial deepening—the demand for and supply of capital, as well as the demand for and supply of financial assets, all should grow at a faster pace than in the rest of the world.

**Figure 6.** Share issuance is a large component of growth in market capitalization

**a. Shares outstanding**



**b. Components of market-cap growth, January 1995–December 2012**



Notes: Growth in shares outstanding is derived from the difference in growth rates between total market capitalization and prices in each group of markets. The countries represented are the members of the FTSE Developed and FTSE Emerging Indexes as of December 2012. We control for country entry and exit in each of the indexes, effectively holding constant the country membership as of December 2012, and using all countries with complete data back to January 1995.

Source: Vanguard, based on data from FTSE.

As shown in **Figure 6**, from 1995 through 2012, emerging markets and developed markets experienced growth in the number of shares outstanding (Figure 6a), as companies' demand for capital led to greater issuance. Emerging markets featured some of the largest IPOs of the past few years, including those of the Russian oil giant Rosneft, which raised \$10.7 billion in 2006; Malaysia's agribusiness Felda, \$3.1 billion in 2012; and Brazil's Banco do Brasil Seguridade, \$5.1 billion in 2013.<sup>9</sup> Share growth actually accounted for the majority of emerging market capitalization growth over this period (Figure 6b).

The upshot is that investors should not expect market-cap growth in emerging economies to be driven solely by share-price appreciation resulting in higher returns. Much of that growth is likely to come from financial deepening as the development of these countries' capital markets is accompanied by increasing issuance of publicly traded equity shares.

**Factor #4, and the bottom line for investors:**

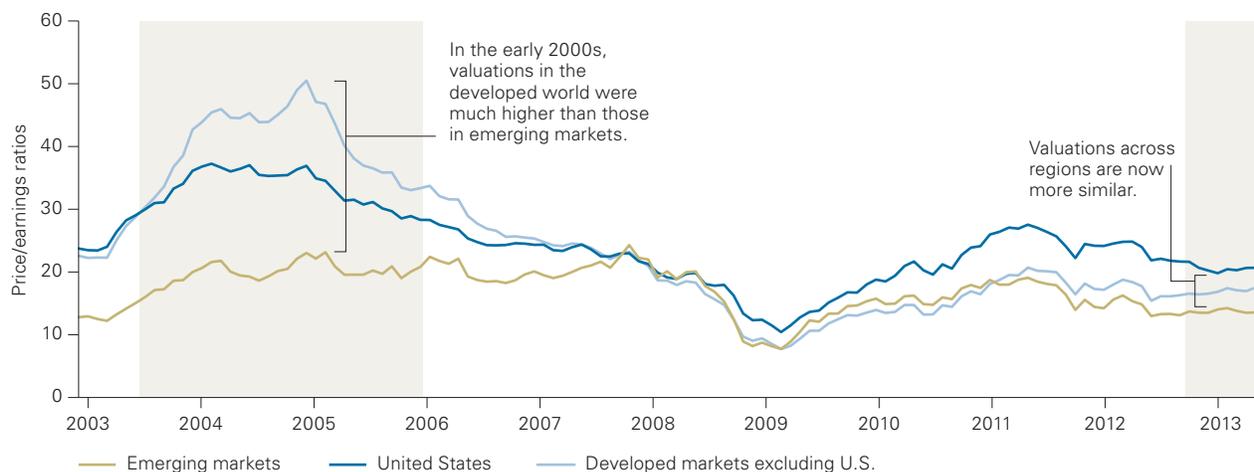
**The price one pays for expected growth is critical**

It's basic financial math that investment returns represent the dollar cash flow of an investment *relative* to the dollar price initially paid for that investment. Thus, when it comes to stock market returns, what matters is not the expected growth of future cash flows per se but the price paid for that

<sup>9</sup> FT.com: "Emerging markets take bigger share of IPOs." Available at <http://www.ft.com/intl/cms/s/0/80e70f82-bf45-11e1-bebe-00144feabdc0.html#axzz2U2vLMFen>

**Figure 7.** Emerging market valuations are now similar to those in developed market benchmarks

36-month trailing P/E ratios for regional indexes, 2003–2013



Note: P/E statistics for each region are from the FTSE All World index series. P/E is based on trailing 36-month earnings.

Source: Vanguard, based on data from FTSE.

cash-flow stream. Equity valuation metrics, such as price/dividend or price/earnings ratios, are therefore arguably the most relevant and useful measures for estimating future market returns.<sup>10</sup>

As previously discussed, markets are forward-looking and investors incorporate the consensus view on economic and earnings growth into their actions. So consensus growth forecasts are already priced in by equity markets, to the extent that they matter in the investment decision. Investors are likely to pay high prices in markets in which expected growth is high and lower prices in markets in which expected growth is low.

For example, relative to a dollar of last year's earnings, a company for which next year's earnings are expected to grow at a fast pace will typically have a higher price than one whose earnings are expected to grow more slowly, meaning that expected returns need not be different. This explanation is entirely consistent with basic economic theory: As long as capital can move freely across borders, there is no reason to expect equity return differentials to persist over the long term, even if differences in GDP and/or earnings growth are expected.

Although emerging market equity returns have been impressive over the past decade, it is important to view them in the context of starting valuations.

<sup>10</sup> Davis, Aliaga-Díaz, and Thomas (2012) conduct a full statistical analysis of how P/E ratios compare to other potential predictors of long-term stock returns, concluding that valuation measures are the most relevant metrics for long-term investors to consider in forming return expectations, but that even valuation leaves a large portion of return variation unexplained.

Those valuations were in fact quite low relative to developed markets (see **Figure 7**, on page 13). Consequently, emerging market investors in the early 2000s paid a lower price for expected earnings than did investors in developed equity markets, such as North America and Europe. The reason, generally speaking, was perceived risk: At the time, some investors were skeptical about emerging markets because of various financial and political crises that had occurred in the late 1990s. That skepticism led to attractive valuations reflecting the perceived risks of these markets. Of course, those who chose to take the risk were eventually compensated with higher realized returns.

Notably, the gap between emerging market and developed market valuations has shrunk considerably over the past decade, and now valuations are fairly similar across most major market regions. Thus, the rising valuations in emerging stock markets have *already* contributed to returns. With valuations where they are today, investors should be cautious about expecting a repeat of the past decade.

### Looking ahead: Implications for portfolio construction

As we have shown, the relationship between economic growth and equity market returns is not as straightforward as many investors might assume. Growth expectations, globalization, financial deepening, and valuation levels all play significant roles in disconnecting long-term growth outcomes from equity market returns. As a result, investors should avoid making portfolio decisions based on their expectations for a particular country's or region's economic prospects.

This analysis underscores our view that an equity allocation that includes all companies and countries and uses market weights as a guideline is a reasonable starting point for most investors.<sup>11</sup> A market-weighted portfolio has the benefit of incorporating all investor beliefs and expectations regarding future prospects for myriad factors, including economic growth. In addition, a market-weighted approach can help avoid any tilt toward single-country risk factors, an approach that has often been associated with increased portfolio risk.<sup>12</sup> Maintaining broad market exposure allows an investor to achieve the maximum possible diversification across countries and securities. We believe that with a focus on maintaining an appropriate asset allocation and controlling costs, investors can indeed realize positive long-term returns in a lower-growth world.

11 For a discussion on setting an appropriate international equity allocation from a U.S. perspective, see Vanguard's related white paper, *Considerations for Investing in Non-U.S. Equities* (Philips, 2012).

12 For details on the benefits of a broad market allocation versus single-country investments in emerging markets, see *Emerging Markets: Individual Country or Broad-Market Exposure?* (Philips et al., 2011).

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