

Asset Allocators: Have You Checked Your EM Allocation Recently?

As the U.S.-China trade war enters into a more serious phase, many investors may wish they had never heard of Emerging Market (EM) equities. Even before the U.S. decision to boost tariffs to 25% on \$200 billion of Chinese goods, EM equities had significantly lagged U.S. equities with the MSCI EM Index up only 11.7% for the year through April compared to a 17.5% gain for the S&P 500 index. The mid-May EM selloff adds insult to injury, as it follows many years of lackluster EM returns compared to stellar U.S. returns.

Regardless of how the U.S.-China trade war evolves over the next few months, we believe that this is an excellent time for long-term investors to consider this recent observation by Larry Swedroe, a financial researcher and author whose work we admire:

“The bottom line is that your global equity allocation should look similar to how the “wisdom of crowds” (in aggregate, all investors) allocates capital. Today that is about one-half U.S., three-eighths developed non-U.S. and about one-eighth emerging markets. For those interested, the year-end 2018 CAPE 10 earnings yields (as good a predictor as we have for future expected *real* returns) was as follows: U.S., 3.6%; Developed non-U.S., 5.8%, and Emerging Markets, 7.3%. (Data provided by AQR Capital Management.)¹

We are in full agreement with his observation, even though data like this has certain limitations. Moreover, we suspect many investors, both individual and institutional, are sitting on portfolios that are well below the “wisdom of crowds” target of a one-eighth weighting toward EM equities in a global equity portfolio – and feeling pretty good about it. Feelings, we believe, can be misleading.

The purpose of this report is to elaborate on Swedroe’s analysis by supplementing his data and adding additional historical and economic perspective. We will focus on three points:

1. EM equities look reasonably valued by historical standards and notably cheap relative to U.S. equities.
2. The U.S. dollar appears poised for a multi-year correction, which should be positive for EM assets.
3. Global equity fund investors face a potential ‘pain trade’ based on their low exposure to EM equities.

If anything, our read of the data suggests this may be a time for investors to tactically increase their exposure to EM equities beyond the “wisdom of crowds” one-eighth weight referred to above. For investors with low or minimal exposure to EM equities, it would be difficult to find a better opportunity to review that stance since EM equities have rarely been cheaper relative to U.S. equities.

The Relative Valuation Case for EM Equities

With the MSCI EM Index trading at the end of April at a level nearly 20% below its peak level from November 2007, EM equities have experienced a “lost decade” (OK, a bit more). In contrast, the International Monetary Fund’s (IMF) measure of Developing and Emerging Economies’ nominal GDP roughly doubled from 2007 to

¹ Larry Swedroe, “Capitalism Vs. Socialism,” [ETF.COM](#), March 18, 2019. Note that “CAPE 10” refers to cyclically adjusted price-earnings ratios based on 10 years of trailing earnings. The term is sometimes used interchangeably with “Shiller P/E” and the term CAPE ratio [has been trademarked by Barclays and Robert Shiller](#).

2018. That immediately suggests that the so-called “Buffett Indicator” of market cap to GDP has moved in a favorable direction as a barometer of EM equity valuation.²

Indeed, the ratio of MSCI EM market cap to EM nominal GDP (based on the IMF data) stood at 15% at the end of March, only slightly above its post-1995 average of 13.5% and down from 22% in 2007 (Chart 1). In contrast, we estimate a market cap to GDP ratio for the U.S. of 140% at the end of March, which is well above its average since 1995 of 108% and in the 97th percentile of readings since 1947 (Chart 2). That puts the Buffett indicator for the U.S. at 125 percentage points above the EM measure, with EM having been relatively cheaper on that relative measure only 7% of the time since 1995.

To be sure, those two measures are not perfectly comparable. For example, the MSCI EM Index excludes (for now) most of the value of Chinese domestically listed A-shares, while the IMF’s figure for EM GDP includes more than just the 24 nations that are included in the MSCI EM Index. Accordingly, market cap to GDP is necessarily a crude measure for EM. Interestingly, however, we get a very similar result when we create “balanced scorecards” of U.S. and EM equity valuations using a broad list of more conventional valuation measures. As we explain below, by those measures EM equities have been relatively cheaper than U.S. equities only 12% of the time since 1995.

Let us first broaden our focus to more conventional valuation measures by updating Swedroe’s estimates of CAPE 10 earnings yields through the end of this April: U.S., 3.2%, developed non-U.S., 5.5%, and EM, 7.5% (Chart 3). These are based on inverting Shiller P/E ratios of 31.1, 18.3, and 13.4 respectively for the U.S., developed non-U.S., and EM. It is instructive to look at the extent to which those ratios have diverged in the past decade, with the U.S. Shiller P/E ratio having more than doubled from 13.2 to 31.1 while the EM Shiller P/E ratio remains close to its depressed level from 2009 (Chart 4). This means that multiple expansion – which cannot go on indefinitely – has accounted for more than half of U.S. market gains since 2009 (8.8% per year compared to total returns of 16.2% per year). In contrast, multiple expansion has been negligible for EM.

The Shiller P/E ratio or related CAPE 10 earnings yields are not without controversy.³ Adjusting for U.S. accounting changes (FAS 142 and 144, related to the writing down of intangible assets) could push the Shiller P/E ratio down by about 4 points, while adjusting for lower dividend payouts (which should lead to higher earnings growth) could push the Shiller P/E ratio down by 1 more point.⁴ So perhaps on an adjusted basis the S&P 500 Shiller P/E ratio is closer to 26.0. That would imply an earnings yield of 3.8% rather than 3.2%, which is still nearly 50% lower than the EM earnings yield of 7.5%. To the extent that such earnings yields are rough-and-ready predictors of future long-term *real* returns, they suggest that EM equities merit serious consideration by asset allocators.

To go beyond the controversies associated with a measure like the Shiller P/E ratio, we have constructed composite valuation measures from 1995 for both the S&P 500 and MSCI EM based on the following measures:

- Price/book ratios
- Price/sales ratios
- Shiller P/E ratios
- Long-term P/E ratios
- Dividend yields
- Forward P/E ratios
- Trailing P/E ratios

Most of these valuation measures are well known, although Bloomberg’s “Long-term P/E ratios” require some introduction. This measure is conceptually very similar to the Shiller P/E ratio since it compares the current real

² The “Buffett Indicator” dates back to a 2001 interview in *Fortune* magazine with Warren Buffett who called the percentage of total market cap to GNP “probably the best single measure of where valuations stand at any given moment.” We use gross domestic product (GDP) rather than gross national product (GNP) because it is released on a timelier basis and has a 0.999 correlation with GDP. See [Warren Buffett, Carol Loomis, “Warren Buffett on the Stock Market, Fortune, December 10, 2001.](#)

³ A useful recent overview of the Shiller PE ratio can be found in [Farouk Jivraj and Robert Shiller, “The Many Colours of CAPE”, December 10, 2018.](#)

⁴ [Larry Swedroe, “Valuation Metrics in Perspective,” ETF.com, November 15, 2015.](#)

price to a 10-year average of real earnings per share. These Bloomberg measures differ from conventional Shiller P/E ratios because they are not computed at the overall index level, but instead are computed on a security-by-security basis and use individual country inflation adjustments to measure cyclically adjusted earnings.

A look at the S&P 500 composite valuation puts it at the 77th percentile of its range since 1995, meaning it has been more expensive only 23% of the time since then (Chart 5). That is based on some measures like the price/sales, price/book, and CAPE ratios being quite elevated, while other measures like forward and trailing P/E ratios are closer to their historic median valuations.

In contrast, our composite valuation measure for the MSCI EM Index puts it at the 59th percentile of its range since 1995, suggesting that it is neither notably cheap nor notably expensive relative to its own history (Chart 6). Moreover, the only notably stretched measure on a percentile basis is the forward price/earnings ratio which is at the 79th percentile. However, that measure is only available from Bloomberg since 2005. It currently stands at 12.8 times relative to its post-2005 average of 11.5 times, so it is not notably elevated in absolute magnitude (Chart 7).

When we look at our post-1995 valuation measures on a relative basis, it turns out that EM valuations on most metrics are quite cheap relative to the S&P 500 (Charts 8). At the composite level, EM has only been cheaper 12% of the time since 1995 relative to the S&P 500, which is not too different from the result we mentioned earlier for the very crude “Buffett indicator” comparisons of market cap to GDP (Chart 9). Once again, the relative measure of EM vs S&P 500 forward P/E ratios stands out and is the only measure that suggests EM is not historically cheap versus the S&P 500 Index (it’s mid-range). At the other end of the spectrum, the Long-term P/E measure (which only goes back to 2003 for EM) suggests that EM relative to the S&P 500 has only been cheaper 3% of the time.

We care about these valuation comparisons because both financial theory and historical data analysis suggest that starting valuation matter for future long-term returns. Indeed, using data since 1995 on rolling 5-year relative returns between EM and the S&P 500, we find that starting relative valuations have been associated with future return differences in almost a monotonic relationship (Chart 10). Since 1995 when the EM vs S&P 500 relative valuation composite has been in its cheapest quintile, as it is currently, EM has outperformed the S&P 500 over the next five years by an average of 8% per year (real), albeit with a wide range.⁵

Important caveats with this type of analysis should be noted, in addition to the all-important “past performance is no guarantee of future results.” First, even using much longer data sets, it has been found that measures like the Shiller P/E ratio can only explain about 40% of future long-term returns. (Swedroe). Second, relative valuation measures have almost no correlation with short-term returns as we show in Table 1. In almost all analysis of this type, the shorter the time horizon, the less that valuation measures appear to be associated with future returns. Given this, it should be no surprise that efforts to use measures like the Shiller P/E ratio to make tactical market timing decisions have yielded little success.⁶

We should also note that even though many of our valuation measures suggest that the U.S. equity market is expensive, that is not to say that it is fundamentally overvalued. The current low level of inflation and interest rates naturally supports higher equity market valuations. Accordingly, some measures which explicitly take interest rates into account suggest that U.S. equities still look cheap relative to government bonds. For example, the so-called “Fed model” currently sees U.S. equities as being nearly 60% undervalued based on a comparison of their 12-month ahead earnings yield relative to the 10-year U.S. Treasury yield (Chart 11). Likewise, NYU finance professor Aswath Damodaran, an expert on valuation measures, estimates that as of May 1st, the “implied equity risk premium” on the S&P 500 (based on multi-year cash flow forecasts) stood at a relatively high 4.99% (Chart

⁵ Note that one drawback of this type of chart – and why such data is very challenging to use for market timing -- is that it involves an important hindsight bias: the valuation quintiles are defined using the full history, which means the market is evaluated each quarter based on both past and future valuations. That is a luxury not available to investors who cannot know how future valuations may evolve and how that may change the definition of high or low valuations. For further discussion of this issue see [Cliff Asness, Antti Ilmanen, and Thomas Mahoney, “Market Timing: Sin a Little,” *Journal of Investment Management*, Vol. 15, No. 3, \(2017\), pp. 23–40](#)

⁶ For research showing how difficult it is to use valuation models to support market-timing strategies see [Javier Estrada, “Multiples, Forecasting, and Asset Allocation”, *Journal of Applied Corporate Finance*, Summer 2015.](#)

12).⁷ That puts it well into the top third of the most attractive relative valuations in his data set which goes back to 1960.

The U.S. Dollar is Also Richly Valued Relative to Purchasing Power Parity (PPP)

Not only are U.S. equities richly valued on a price-to-earnings basis, but the U.S. dollar is also very richly valued on a purchasing-power-parity (PPP) basis especially against EM currencies. For long-term investors, if “buy low, sell high” applies to equity valuations, it should equally apply to currency valuations.

Using official International Monetary Fund (IMF) data, the U.S. dollar was estimated to be nearly 80% overvalued in 2018 on a PPP basis, which is toward the extreme end of its historic range (Chart 13). Note that this data suggests that the U.S. dollar has remained overvalued for decades, which reflects the strong and persistent structural demand for dollars tied to the dollar’s role as the key currency in the global financial system. That said, the dollar has gone through three major cycles since the early 1980s, with moves toward extreme overvaluation first in the mid-1980s, then in the early 2000s, and most recently in the last several years. Following each period of extreme overvaluation, the dollar then entered into a multi-year period of decline lasting from five to seven years.

Although there is no guarantee that the dollar will follow this same pattern in the future, it is instructive to look at history to see how the dollar’s value has changed over five-year periods based on its starting level of valuation relative to PPP. Based on annual IMF data from 1985 through 2018, we found that when the dollar was as richly valued as it is now, the Fed’s real broad dollar index posted an average annual decline of 4.5% over the following five years (Chart 14).⁸ As indicated by the “you are here” label in Chart 9, the U.S. dollar in 2018 was in the top 20% of its historic range of overvaluation by the IMF’s PPP measure. Once again, there is a “small sample size” problem of only (!) 33 years of data and just three major dollar cycles. But it is striking that over that period there were no episodes of the dollar rising in value over the next five years following its current degree of overvaluation.

This history of U.S. dollar cycles is important to potential EM investors for the following reason: EM equities tend to outperform other equity markets when the U.S. dollar is weakening and tend to underperform during periods of dollar strength. For example, using monthly data since January 1988 on the MSCI EM/MSCI World relative price versus the Fed’s U.S. trade-weighted real broad dollar index, the correlation is a highly negative -0.74 (Chart 15). Based on this history, the best entry point for EM equity investors would be during a period of extreme dollar overvaluation. That’s because any reversion to mean toward a weaker dollar then should create a positive currency tailwind for EM equity investors.

What is behind the current period of U.S. dollar overvaluation? In our opinion, there are two key factors underpinning the greenback’s strength, both of which should fade over the next three-to-five years. First, the resilience of the U.S. economy in the aftermath of the Global Financial Crisis permitted the Fed to gradually raise interest rates while foreign economic fragility kept interest rates depressed – and even negative – overseas. Secondly, Trump administration tax cuts helped in 2018 to create a policy mix of expansive fiscal policy and tighter monetary policy. That policy mix is a textbook recipe for currency strength.

There are already signs that the “sugar high” of fiscal stimulus will soon wear off as the flattening yield curve in the U.S. points to slower growth ahead. Financial markets have already begun to price in one or two Fed rate cuts in 2020, suggesting that the policy mix is shifting away from the tight-money, expansive fiscal policy mix that pushed the dollar higher in recent years. President Trump indicated on March 2 that he was not pleased with the dollar’s run-up, stating that “I want a dollar that’s great for our country but not a dollar that’s prohibitive for us to be doing business with other countries.”⁹ He has also been highly critical of Fed Chairman Jerome Powell’s

⁷ See Aswath Damodaran’s blog, [“Damodaran Online.”](#)

⁸ Once again, as mentioned in footnote 5, this type of analysis is subject to hindsight bias because the PPP valuation quintiles are defined based on the full history.

⁹ Megan Henny, “Trump, in CPAC speech, says Fed interest rate hikes hurt the economy,” Fox Business, March 2, 2019

monetary policy and raised questions about the Fed's future independence with (now scuttled) efforts to nominate political allies like Herman Cain and Stephen Moore to the Fed's seven-member board.

None of these developments is surprising in the light of history, since periods of extreme dollar overvaluation have always been painful for broad sectors of the U.S. economy, particularly for export-oriented sectors like manufacturing and agriculture. With these sectors being very important to the President's political base, the surprise would be if the President were not seeking corrective measures to bring about a weaker dollar. We would also note that an expansion of America's "twin deficits" -- the sum of the federal budget deficit and current account deficit -- has been a reasonably good leading indicator of trends in the U.S. dollar with a lead of 1-to-2 years (Chart 16). As both deficits have been expanding, the twin deficit indicator is pointing toward dollar weakness ahead.

Global Equity Fund Investors Are Underexposed to EM

Given the long period of EM underperformance, it should be no surprise that global equity fund investors have become significantly underexposed to the asset class. According to analysts at J.P. Morgan, global equity fund investors currently have only 7.6% of their assets in EM equities compared to their share in the MSCI All-Country World Index (ACWI) of 11.7% (Chart 17).¹⁰ Note that the J.P. Morgan data is based on a global equity fund universe of \$14.7 trillion in assets, which suggests that global equity fund investors are collectively underweight EM equities relative to the MSCI ACWI benchmark by approximately \$600 billion¹¹.

That arithmetic suggests that the "pain trade" for global equity fund investors could well be for EM equities to outperform DM equities over the next several years. If this materializes, such a trend would put significant pressure on global equity fund managers to reduce their underexposure to EM equities by buying into rising EM equity markets. If the J.P. Morgan analysis is at all on target, global equity fund investors are currently far below a neutral (market-weight) EM equity exposure at a time when EM equities are extremely inexpensive relative to U.S. equities.

We would also note that arguments regarding excessive risks in EM may be less relevant now as EM economies have generally become better managed. Note, for example, that the volatility of EM equities has been virtually identical to that of U.S. equities over the past twenty years (Charts 18 and 19). Accordingly, if EM equities are priced to deliver substantially higher returns with essentially the same level of volatility, there is a strong argument for global fund investors to overweight those markets rather than simply closing their degree of underexposure.

EM equities also offer a useful diversification benefit to investors precisely because they do not always move in line with U.S. equities. In fact, over the past five years the correlation of the MSCI EM Index to the S&P 500 Index has been a rather modest 0.65, in line with its average since the early 1990s (Chart 20). Moreover, the correlation with the U.S. has declined significantly compared to a decade ago. We suspect that declining correlation reflects the rising role of giant economies like China and India, whose markets often respond to independent business cycle and government policy influences.

Conclusion: The Future is Already Here...

This report has focused primarily on the relative valuation case for EM equities, based on both relative equity valuations and currency valuations. Both comparisons now favor significant exposure to EM equities, particularly

¹⁰ Pedro Martins Junior, CFA, et al., "Herd Instinct," *Key Emerging Markets and Developed Asia Fund Flow Weekly*, March 22, 2019

¹¹ Specifically, the J.P. Morgan data estimates as of mid-March that total net EM equity assets were \$1.1 trillion, or 7.6% of their \$14.7 trillion global equity fund universe. In comparison, an ACWI market weight exposure of 11.7% would require EM equity exposure of \$1.7 trillion in that universe, implying that global equity fund investors are collectively underexposed to EM equities by \$600 billion. That suggests an equivalent overweight by other investors, presumably local EM investors, of the same degree. Effectively, this means that global equity investors and local EM investors may both be exhibiting "home-country bias" in their equity allocations.

for investors with a long-term investment horizon of five-to-ten years who are willing to look through short-term volatility created by U.S.-China trade frictions.

As we have shown, starting levels of absolute and relative valuations have historically mattered a lot for future long-term equity returns. While there is no such thing as a “free lunch” in financial markets, if history is any guide the odds currently appear tilted in favor of EM outperformance in coming years. This is particularly true if long-term trend growth differentials continue based on well-established demographics and productivity trends. As a recent study by the Brookings Institute suggested, such trends point to a huge geographic distribution shift in middle-class consumer markets, “with China and India accounting for an ever-greater market share while the European and North American middle class basically stagnates.”¹²

The Brookings Institute projections for the next decade are staggering, with middle-class consumption by China and India rising by 2030 to more than 5 times that of U.S. middle-class consumption (Table 2). Whether measured in terms of number of consumers or total spending, Asian middle-class consumption seems likely to dwarf that of the U.S. by 2030. To be sure, such projections have been around for a long time, including long periods when EM equities have disappointed. Assume, however, that such projections are likely to be true, as we do. Wouldn't the best time to invest on that premise be precisely when relative valuations suggest that other investors are deeply skeptical?

A key question will be whether and when narratives that support the current relatively rich valuation of U.S. equities begin to change. For example, consider former Fed Chairman Alan Greenspan's recent comments about the U.S. outlook. Warning of a “stock market aura” currently boosting growth, he predicts over the long run “growth fades very dramatically” because rising entitlements are “draining capital investment dollar for dollar.”¹³ Mr. Greenspan's view may or may not turn out to be correct, but it is an example of how one very well informed market observer believes the economic narrative regarding the U.S. economy could shift in coming years.

In contrast, while China's macroeconomic risks are well known and widely discussed, we believe that the dynamism of Chinese companies may be underappreciated by many investors. Consider this recent interview with Shopify CEO Tobias Lutke regarding innovation in China:

“A lot of innovation is coming from China. A lot of people have not realized that China has completely flipped on its head. It is not just copying ideas from the West; it is actually delivering new ideas like fully automated supermarkets that are coming to various cities all over China. What is life like in China? It is appreciably more futuristic than it is anywhere else by being a post-credit-card world through WeChat Pay and all these kind of things which are unlocking completely new business models for them.”¹⁴

Mobile payments is an area where China is clearly leapfrogging the developed world, with China having processed an astonishing \$12.8 trillion in mobile payments in the first ten months of last year. While it is not an apples-to-apples comparison, the U.S. in 2017 had just \$49 billion of mobile transactions.¹⁵

More broadly, a recent J.P. Morgan report made this comparison between U.S. and Chinese companies:

“China lags on aggregate, especially on spending on R&D, higher-end manufacturing (like aircraft), measures of innovation, as well as on its cloud and AI capabilities. That said, China has taken the lead in a variety of areas, ranging from e-Commerce, mobile payments, semiconductor consumption, share of super-computers, EVs, renewable energy, industrial robots, and drones.”

These topics could each be the subject of dedicated reports. The broader point is this: at current valuations, markets appear to be taking a rather extreme view of the risks of investing in EM relative to the U.S. In contrast,

¹² Homi Kharas, “The Unprecedented Expansion of the Global Middle Class: An Update,” *Global Economy & Development Working Paper 100*, Brookings Institute, February 2017.

¹³ Jeff Cox, “Alan Greenspan says economy will start to fade ‘very dramatically’ because of entitlement burden,” CNBC.com, April 12, 2019.

¹⁴ Episode #359, “Tobi Lutke, From snowboard shop to billion-dollar company,” The Tim Ferriss Show, February 7, 2019.

¹⁵ John Enger, “Lessons from a mobile payments revolution,” *American Banker*, March 2019.

our team of bottom-up EM analysts sees dynamic wealth creation continuing not only in China, but in numerous other EM nations and industries as well. For those who believe, as we do, that there is still enormous potential for wealth creation in EM nations in coming years, the current valuation gap relative to the U.S. represents both a puzzle and an opportunity.

At the very least, beware of taking the last ten years of global market trends and using it as the baseline for the next ten years. As sci-fi writer William Gibson famously said: “The future is already here: it’s just not evenly distributed.”¹⁶

One way to think of the uneven distribution of the future is just to look at the stunning visualization of the world’s population in Chart 21, which shows how small the U.S. population is in the global context.

Now ponder this: Ten years from now, how likely is it that the U.S. equity market will continue to represent roughly half of the world’s equity wealth when it accounts for only 4% of the world’s population?

Our guess: not very.

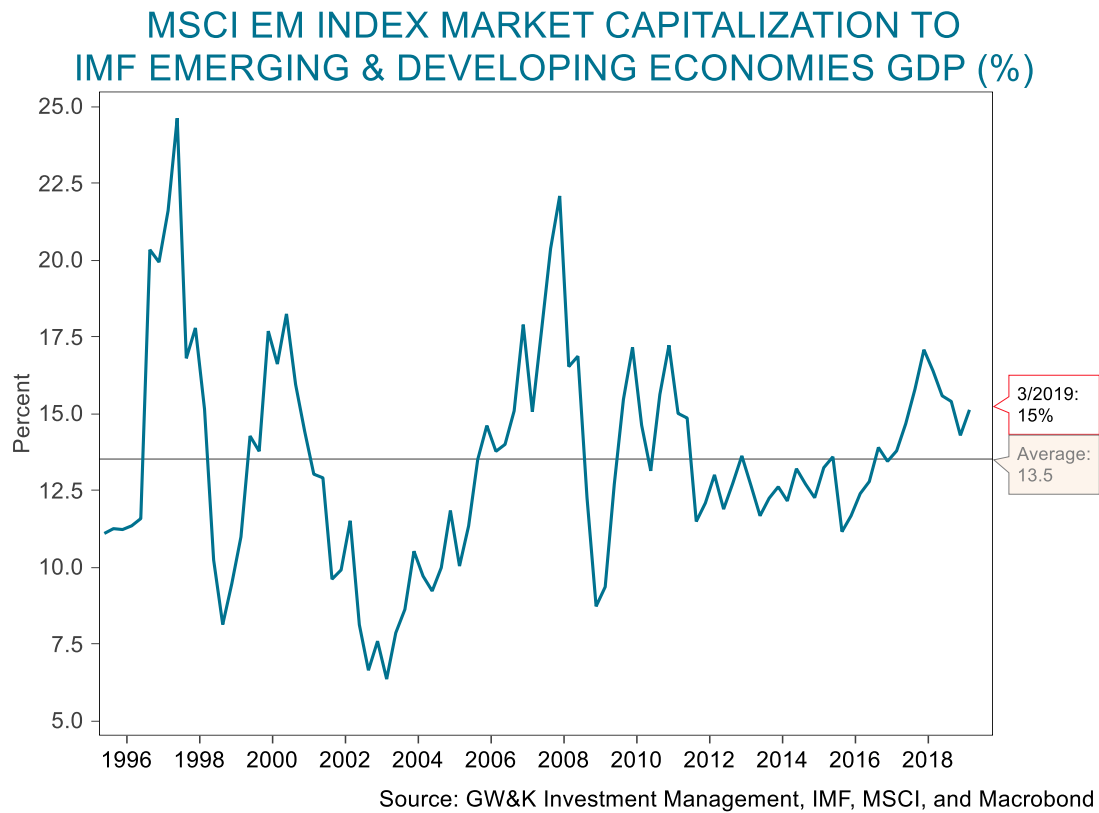
William Sterling

Global Strategist

GW&K Investment Management

¹⁶ https://en.wikiquote.org/wiki/William_Gibson

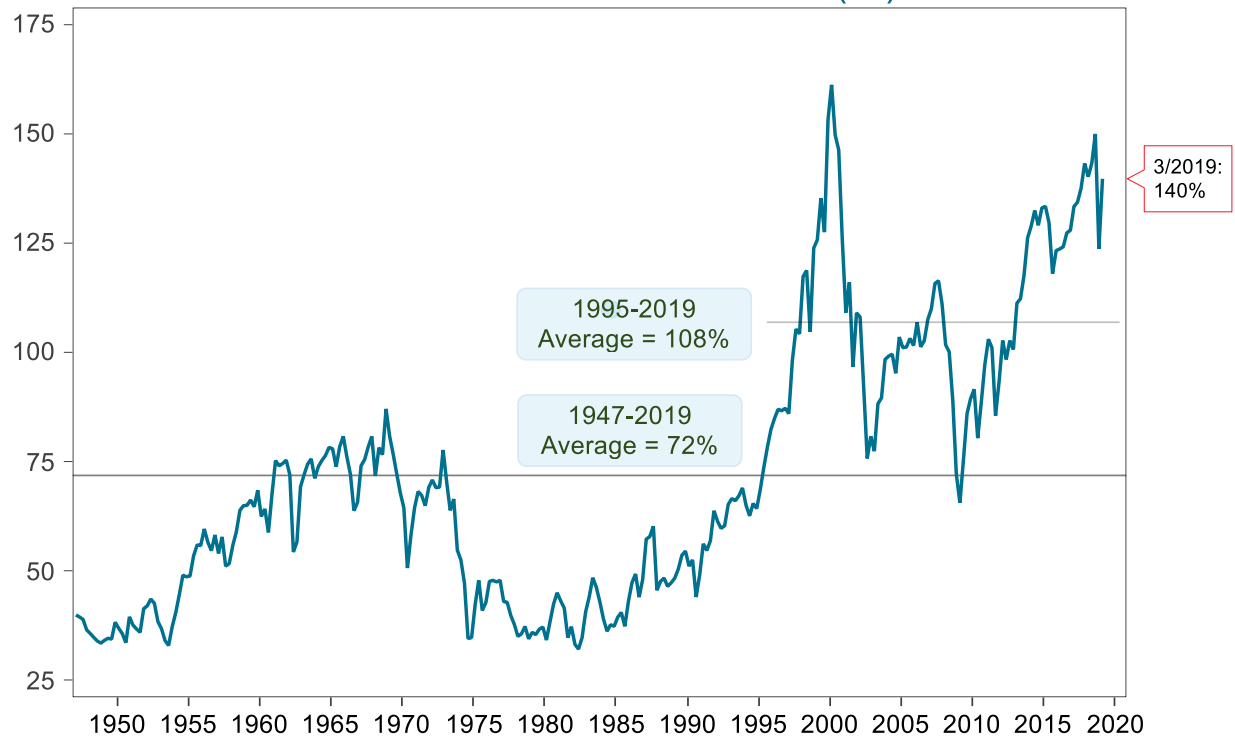
Chart 1



The so-called “Buffett indicator” of market cap to GDP for EM equities is currently around 15%, not far above its average of 13.5% since 1995.

Chart 2

U.S. EQUITY MARKET CAPITALIZATION TO NOMINAL GDP RATIO (%)*

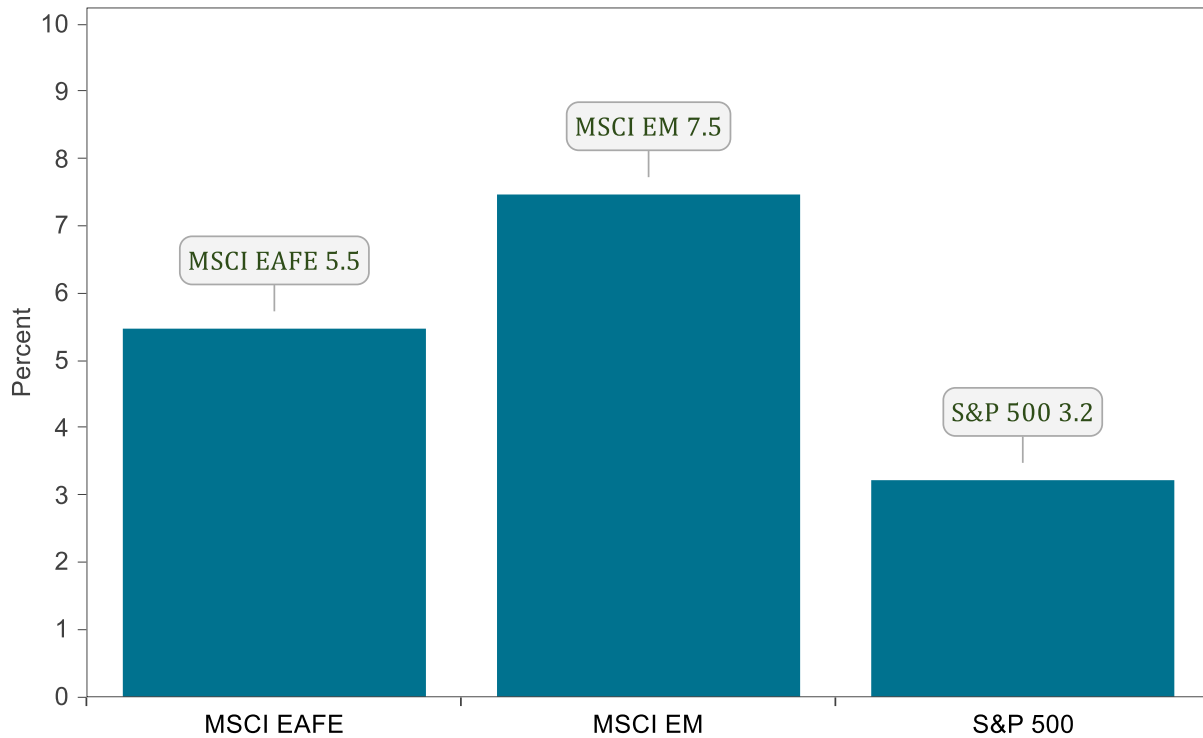


*Note: 2019 Q1 market cap data estimated by GW&K Investment Management.
Source: GW&K Investment Management and Macrobond

The “Buffett Indicator” of U.S. market cap to GDP is currently about 140%, well above its average of 108% since 1995 and at the 97th percentile of its range since 1947.

Chart 3

LONG-TERM EARNINGS YIELD COMPARISON: MSCI EM AND EAFE VS S&P 500 INDICES



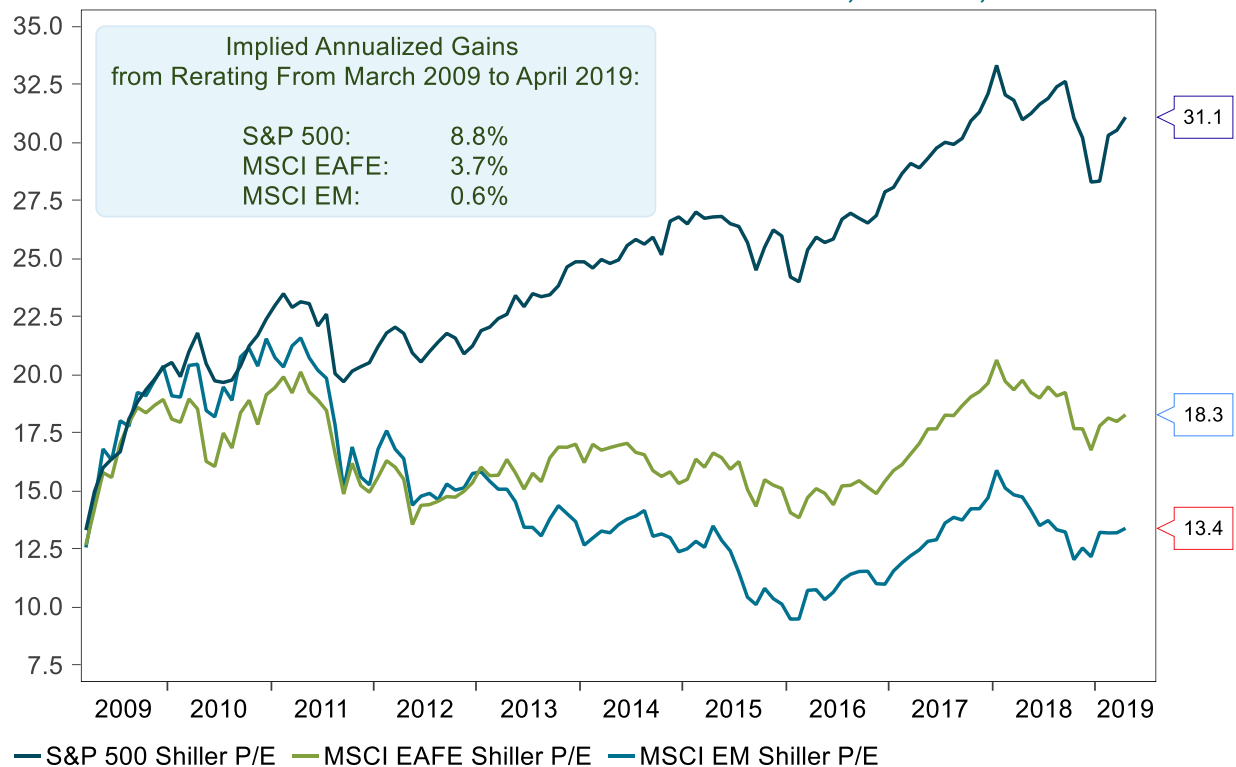
Note: Based on inverse of Shiller PE ratios as of 4/30/2019;

Source: GW&K Investment Management, Robert Shiller, MSCI, Bloomberg, and Macrobond

Long-term earnings yields can be viewed as rough proxies for expected future long-term real returns and currently show the S&P 500 earnings yield to be much lower than for EM or EAFE.

Chart 4

US STOCKS HAVE DRAMATICALLY RE-RATED SINCE 2009: SHILLER P/E RATIOS FOR THE U.S., EAFE, & EM

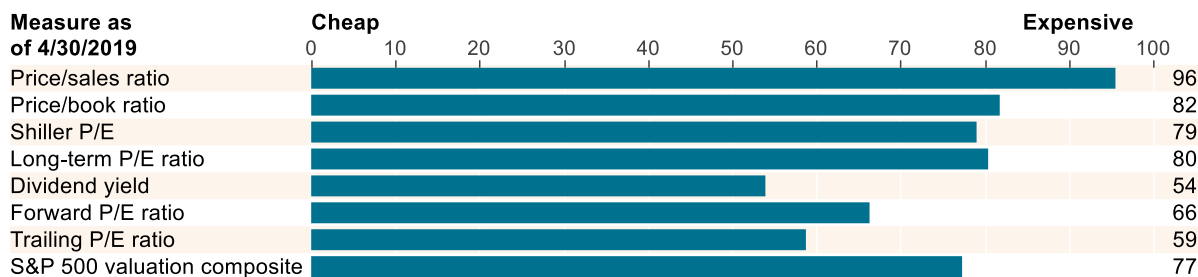


Source: GW&K Investment Management and Macrobond

The Shiller P/E ratio for the U.S. has more than doubled since 2009 compared to a relatively stagnant Shiller P/E for MSCI EM. More than half of U.S. equity gains since 2009 are due to multiple expansion.

Chart 5

CURRENT S&P 500 VALUATION MEASURES PERCENTILE RANKS SINCE 1995*



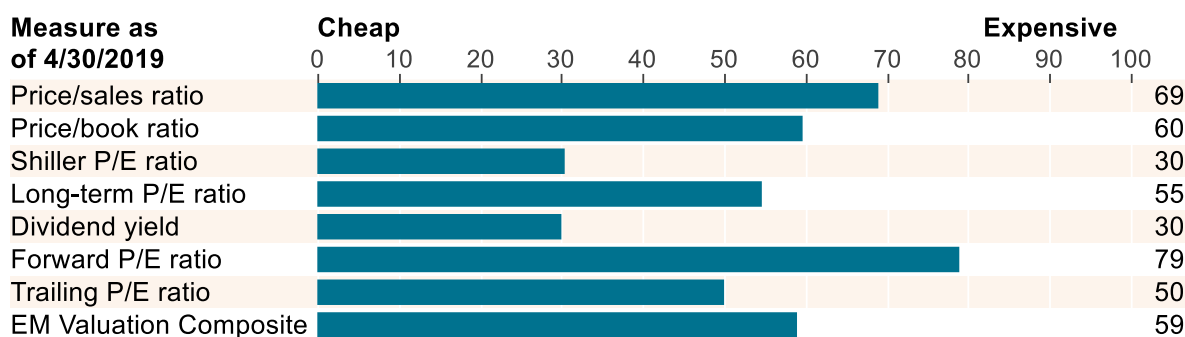
*Note: Based on data from January 1995 through April 2019

Source: GW&K Investment Management, R. Shiller, Bloomberg, S&P, and Macrobond

Several conventional metrics of S&P 500 equity valuation measures are toward the high end of their post-1995 range, with our S&P 500 valuation composite at the 77th percentile.

Chart 6

CURRENT MSCI EM VALUATION MEASURES PERCENTILE RANKS SINCE 1995



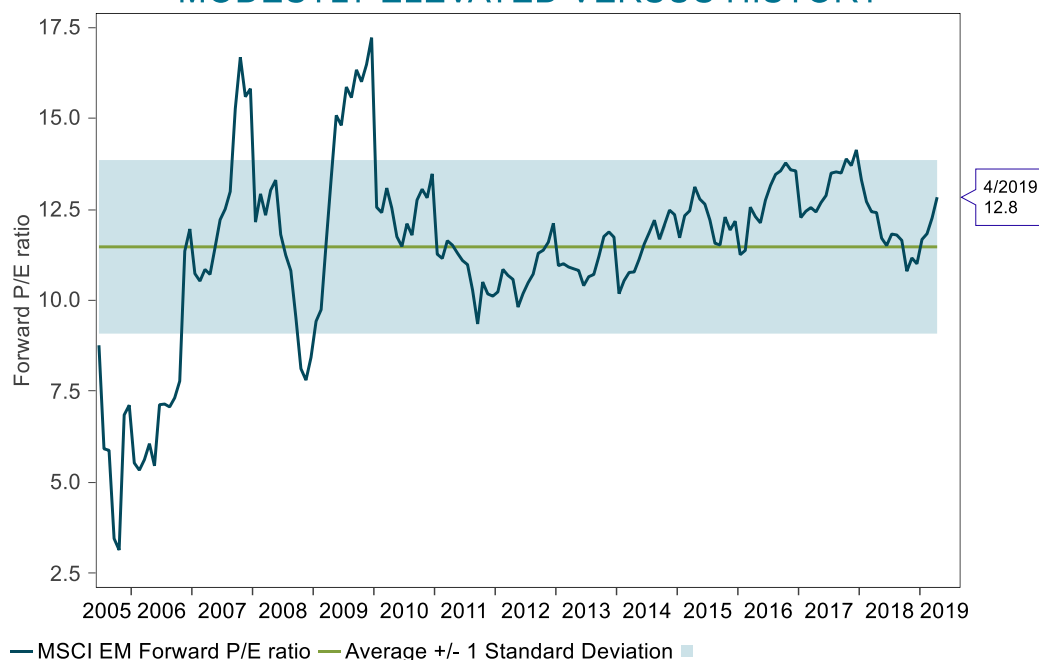
Note: Based on data from January 1995 to April 2019, except CAPE 10 data is from 2003 and Forward P/E from 2005;

Source: GW&K Investment Management, Robert Shiller, Bloomberg, MSCI, and Macrobond

Conventional EM equity valuation measures are generally not far from post-1995 median levels, with our MSCI EM valuation composite at the 59th percentile.

Chart 7

MSCI EM FORWARD P/E RATIO IS MODESTLY ELEVATED VERSUS HISTORY

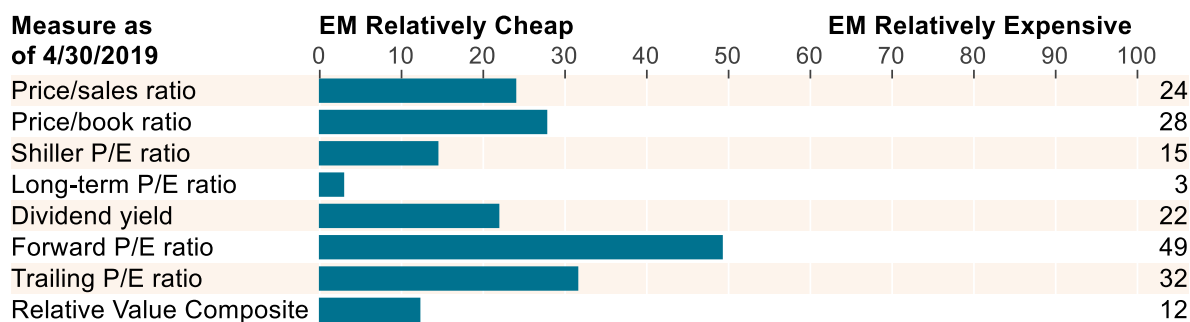


Source: GW&K Investment Management, Bloomberg, and Macrobond

The most elevated EM valuation measure is the Forward P/E ratio, which is at the 79th percentile since 2005 as of April 30th. But at 12.8 times, it is only modestly above its long-term average of 11.5 times.

Chart 8

CURRENT MSCI EM VS S&P 500 RELATIVE VALUATION PERCENTILE RANKS SINCE 1995



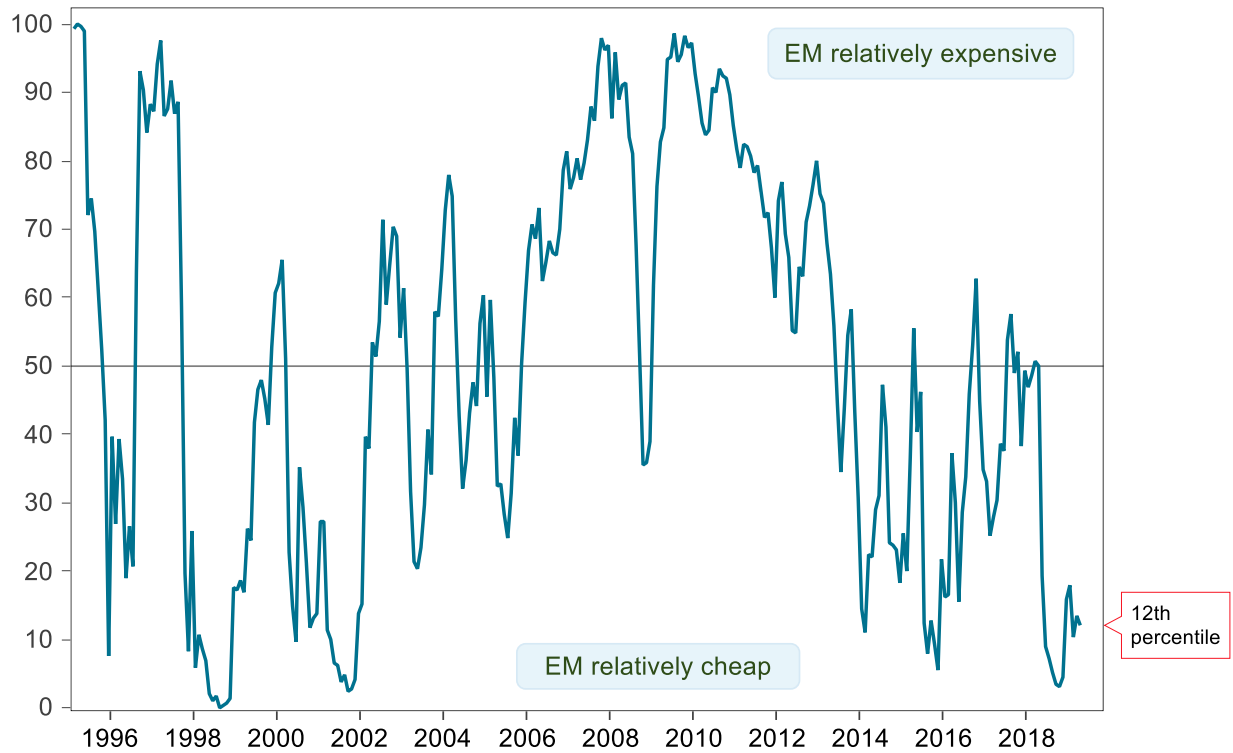
Note: Based on data from January 1995, except Shiller PE is from 2005, EM CAPE 10 is from 2003 and EM Forward P/E from 2005.

Source: GW&K Investment Management, Robert Shiller, Bloomberg, MSCI, S&P, and Macrobond

EM looks relatively very cheap: Almost all EM valuation measures look notably cheap relative to comparable measures for the S&P 500, except for the Forward P/E ratio (which is mid-range).

Chart 9

MSCI EM VS S&P 500 RELATIVE VALUE COMPOSITE PERCENTILE RANK SINCE 1995

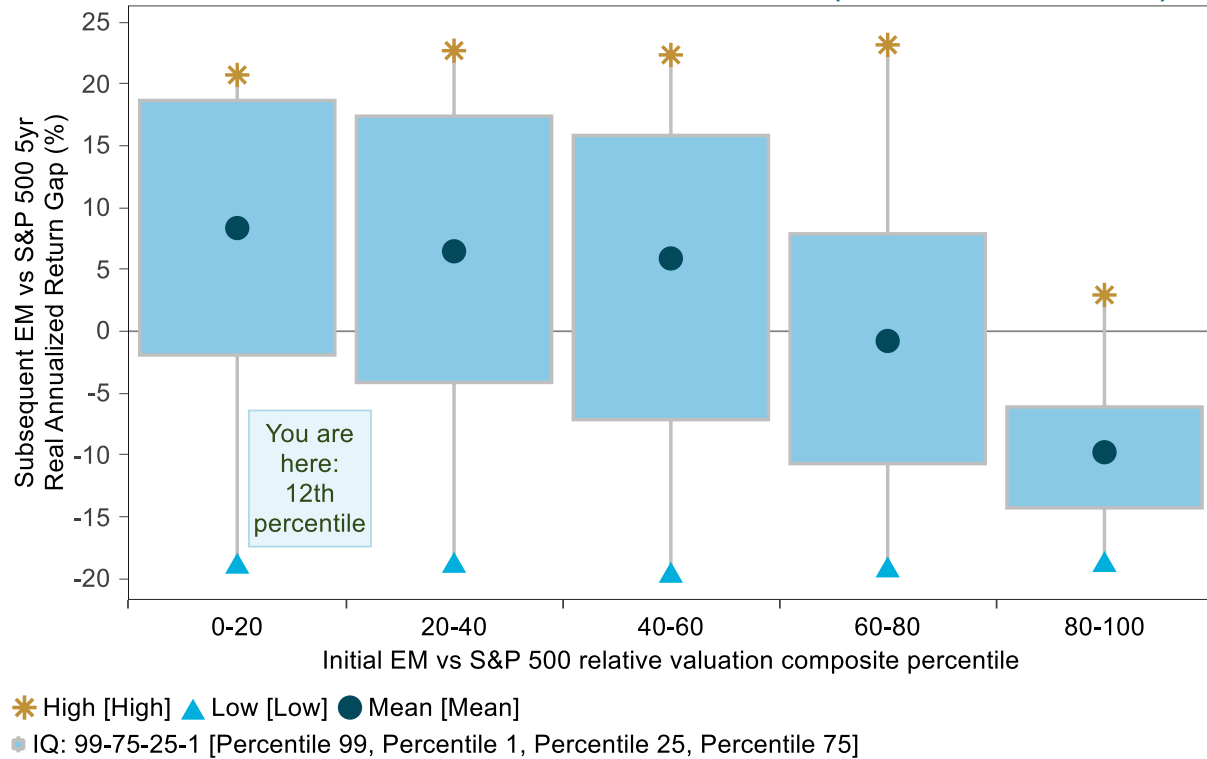


Source: GW&K Investment Management, Robert Shiller, Bloomberg, MSCI, and Macrobond

Based on our EM vs S&P 500 composite valuation measure, EM has only been cheaper relative to the S&P 500 12% of the time since 1995.

Chart 10

MSCI EM VS S&P 500 5-YEAR REAL RETURN GAP SORTED BY RELATIVE VALUATION (2000-2019 data)



Source: GW&K Investment Management, Bloomberg, MSCI, and Macrobond

Since 1995, when EM has been in the bottom fifth of relative valuation versus the S&P 500, as it is now, EM subsequently outperformed the S&P 500 by 8% per year, albeit with a wide range of outcomes.

Table 1

How much do relative EM/S&P 500 valuation measures matter by time horizon?
Proportion of variance of EM vs S&P 500 real return gap explained by various measures
(1995Q1-2019Q1)

Relative Valuation Measures	Time horizon				Average
	1-Year	3-Years	5-Years	10-Years	All Horizons
Price/sales ratio	1%	2%	19%	71%	23%
Price/book ratio	1%	0%	7%	54%	16%
Shiller P/E ratio	2%	1%	4%	79%	21%
Long-term P/E ratio	0%	10%	43%	84%	34%
Forward P/E ratio	16%	26%	66%	80%	47%
Trailing P/E ratio	8%	8%	13%	7%	9%
Dividend yield	22%	10%	17%	12%	15%
Composite relative valuation	6%	7%	26%	48%	22%

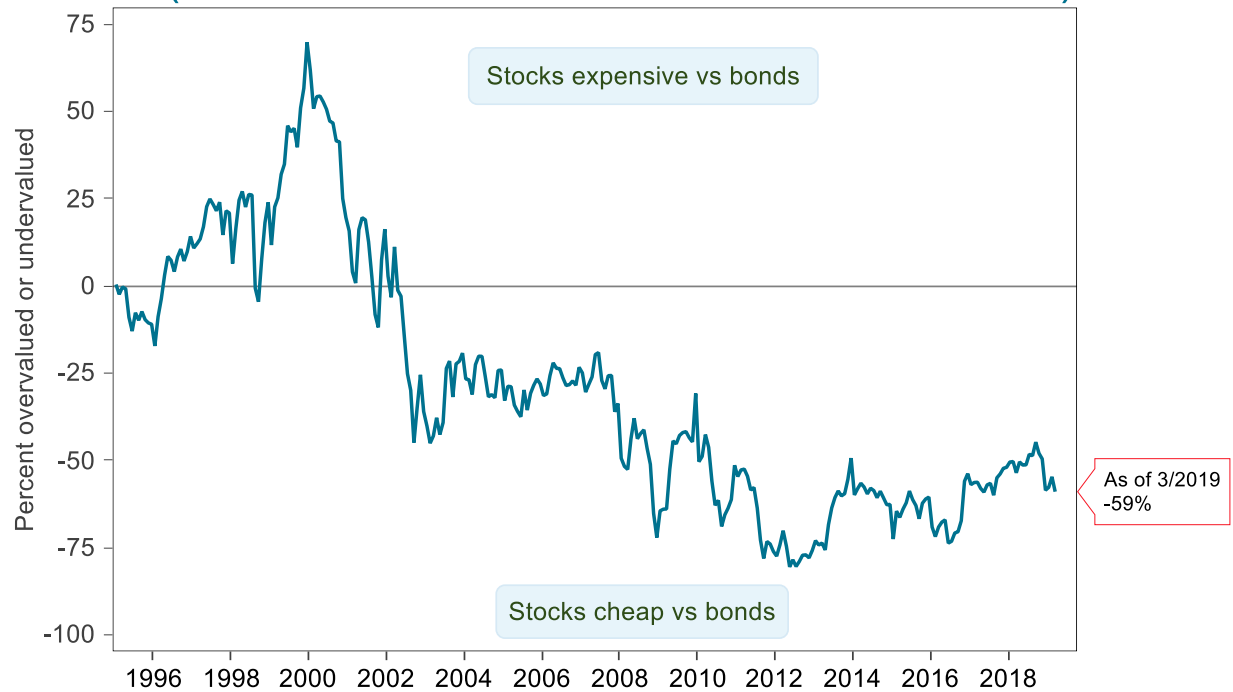
Note: EM data for Shiller P/E and Forward P/E begins in 2005 and for Long-term P/E in 2003.

Source: GW&K Investment Management, Robert Shiller, MSCI, Bloomberg, and Macrobond

Relative EM vs S&P 500 valuation measures have had almost no correlation with future 1-year and (for the most part) 3-year returns, but have mattered more for future 5-year and 10-year returns.

Chart 11

FED MODEL: STOCK VS BOND VALUATION MODEL (USING 10-YEAR US TREASURY YIELD)



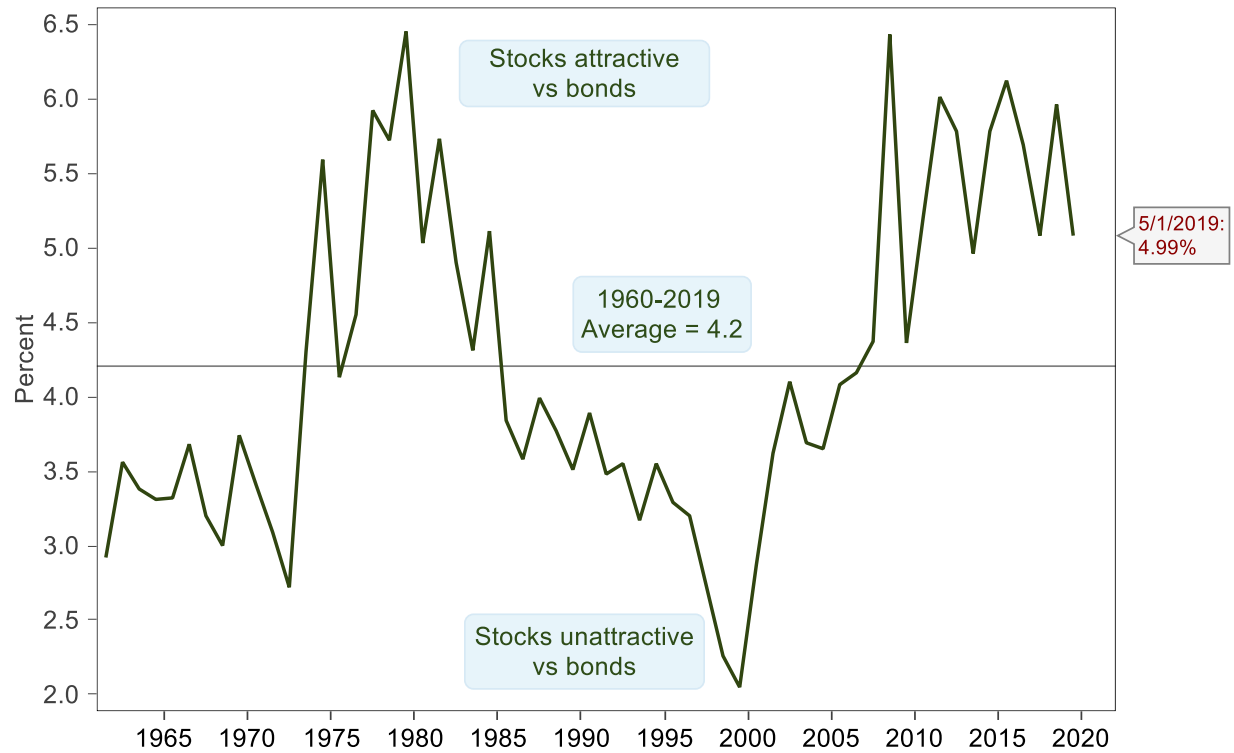
Note: S&P 500 index price divided by fair value based on Bloomberg 12-month forward earnings divided by 10-year US Treasury yield converted to percentage.

Source: GW&K Investment Management, Bloomberg, and Macrobond

The so-called Fed model, which is based on a comparison of the earnings yield of stocks relative to the 10-year U.S. Treasury yield, shows the S&P 500 to be nearly 60% undervalued.

Chart 12

US STOCKS REMAIN ATTRACTIVE VS BONDS: S&P 500 IMPLIED EQUITY RISK PREMIUM

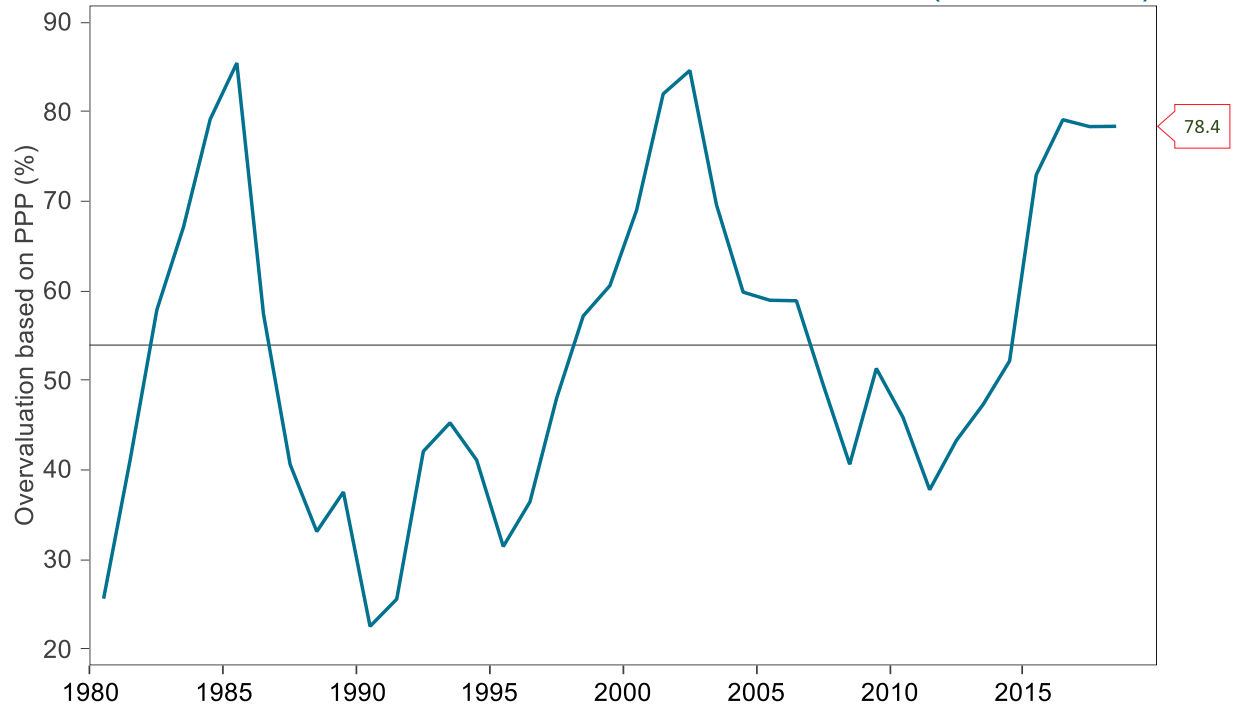


Source: GW&K Investment Management, Aswath Damodaran, and Macrobond

A theoretically sound model of the implied equity risk premium of the S&P 500 – with multi-year cash flow forecasts and 10-year Treasury yields as key inputs -- shows U.S. stocks to still be attractive.

Chart 13

US DOLLAR OVERVALUATION VS FOREIGN CURRENCIES BASED ON PURCHASING POWER PARITY (1980-2018)



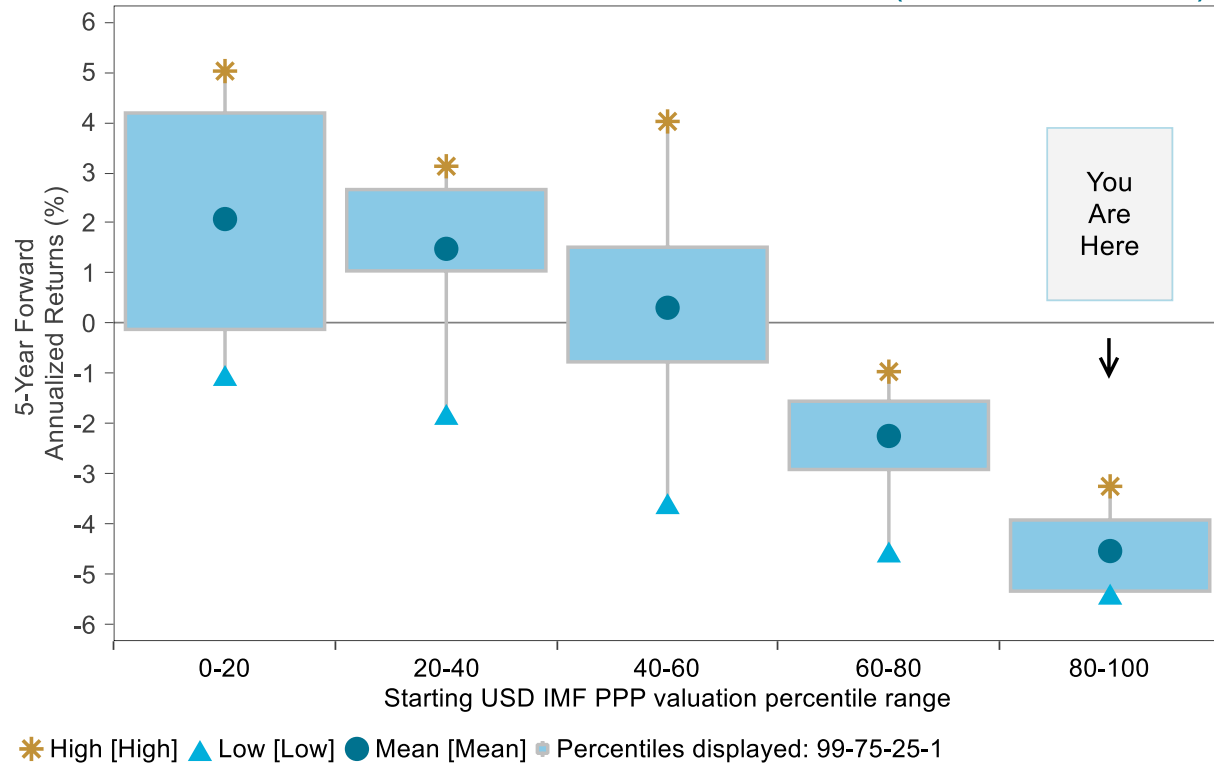
Note: Based on the ratio of IMF estimates of world ex US GDP in nominal vs PPP-based Terms

Source: GW&K Investment Management, IMF October 2018 World Economic Outlook, and Macrobond

Based on IMF data, the U.S. dollar in 2018 was nearly 80% overvalued on a purchasing-power-parity (PPP) basis. Extreme overvaluation in the past has been followed by multi-year dollar declines.

Chart 14

US REAL TRADE-WEIGHTED DOLLAR 5-YEAR RETURNS FROM DIFFERENT STARTING PPP LEVELS (1985-2018 data)

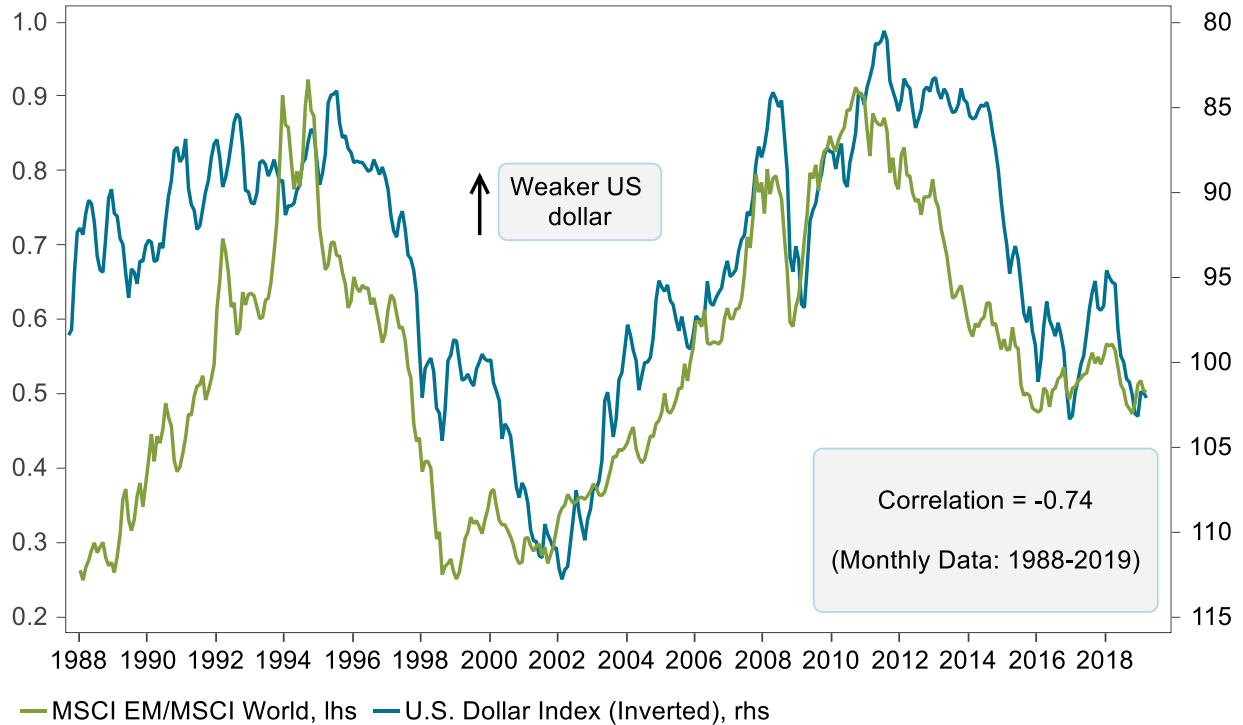


Source: GW&K Investment Management, IMF, Bloomberg & Macrobond

The Fed's trade weighted real broad dollar index has declined at an average annual rate of 4.5% in five-year periods following times when it was nearly as overvalued on a PPP basis as it is currently.

Chart 15

THE US DOLLAR IS NEGATIVELY CORRELATED WITH THE RELATIVE PERFORMANCE OF MSCI EM VS WORLD

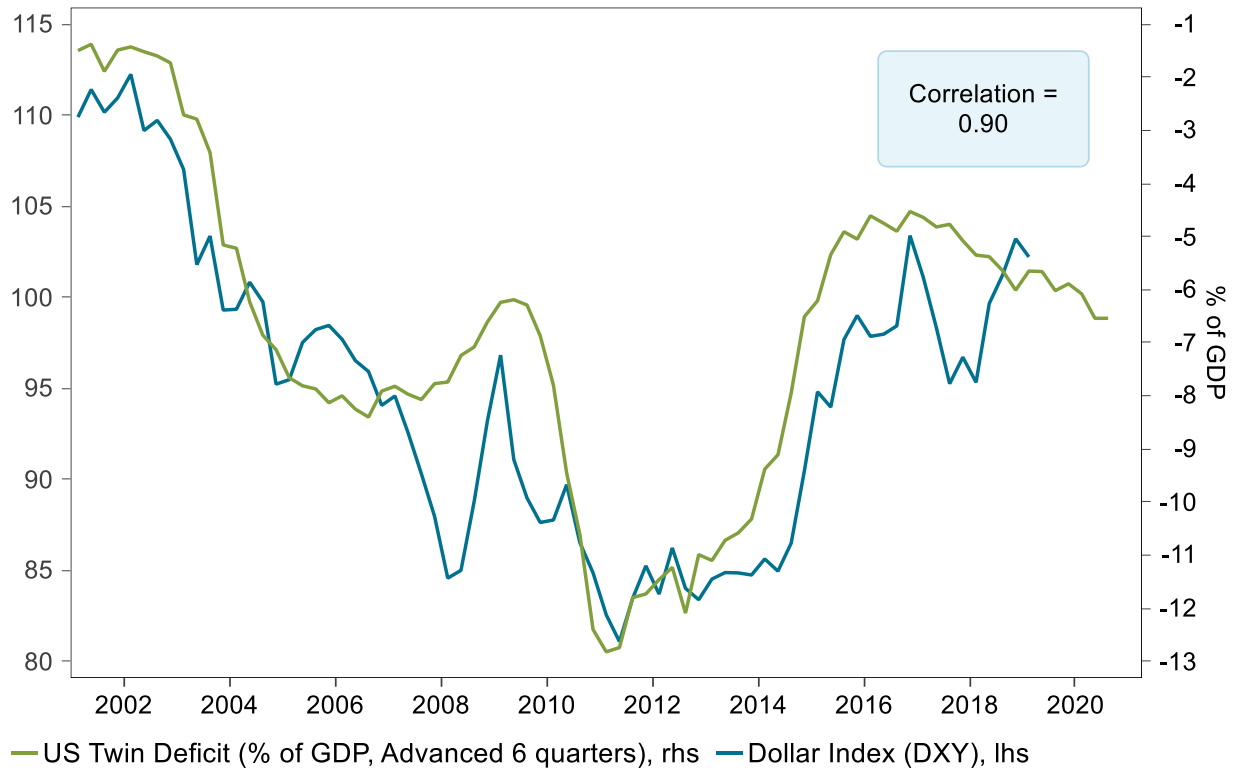


Note: Based on the Fed's trade-weighted US real broad dollar index;
Source: U.S. Federal Reserve, MSCI, Bloomberg, and Macrobond

EM equities have historically outperformed DM equities during periods of U.S. dollar weakness – and vice versa.

Chart 16

US TWIN DEFICITS LEAD THE US DOLLAR BY ABOUT 6 QUARTERS

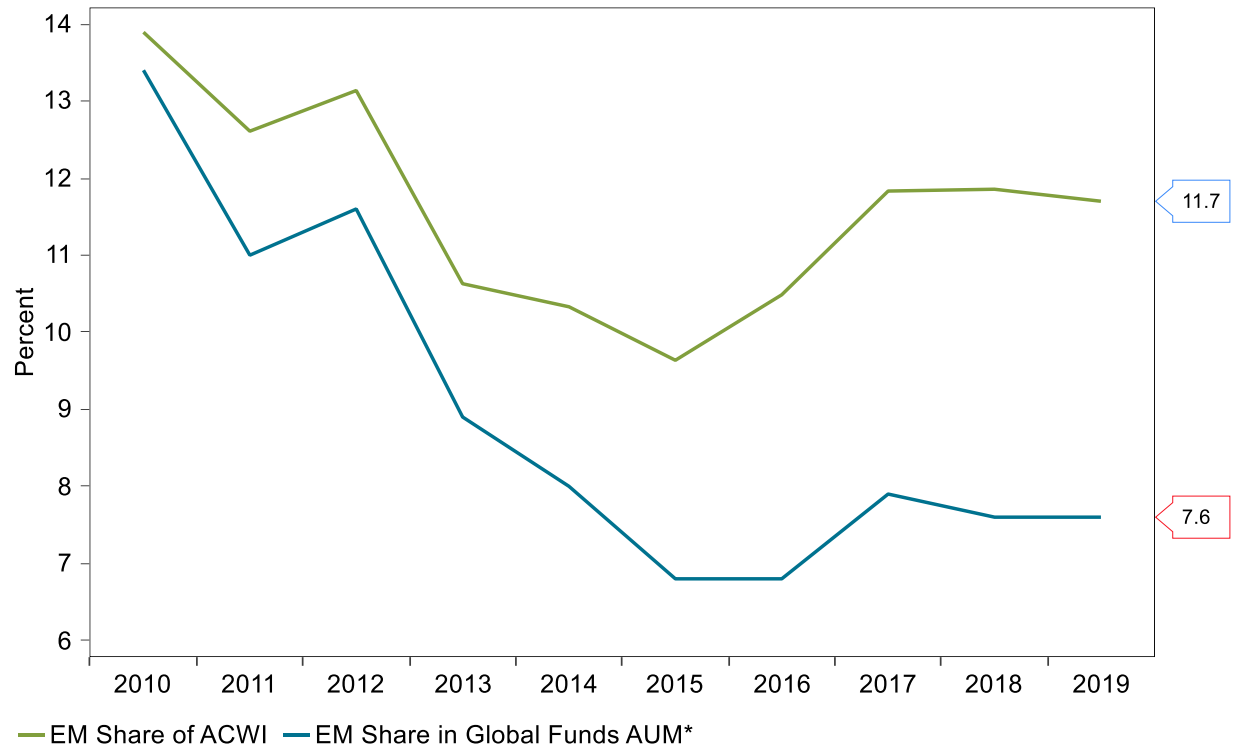


Source: GWK Investment Management, Bloomberg, and Macrobond

America's "twin deficits" – the sum of the federal budget deficit and current account deficit as a percent of GDP – have been expanding. Historically this has led to a weaker U.S. dollar.

Chart 17

GLOBAL FUND INVESTORS HAVE BECOME HEAVILY UNDERWEIGHT EMERGING MARKETS

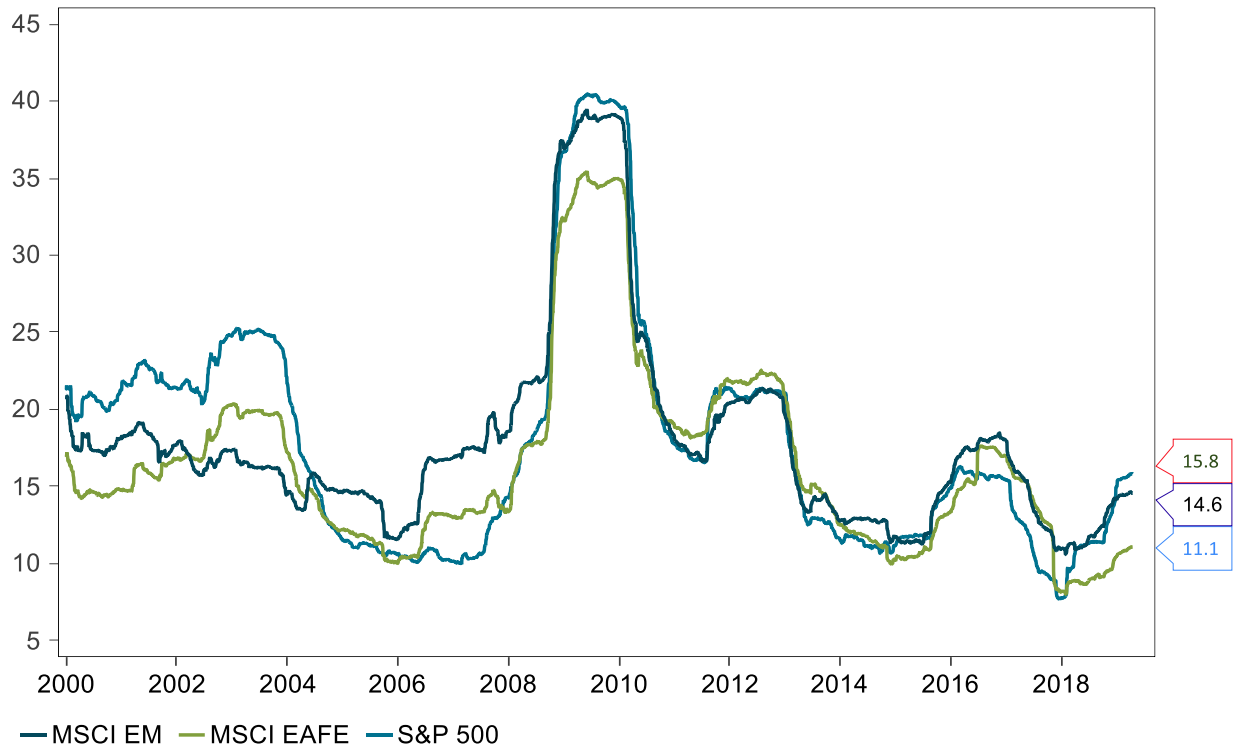


Source: J.P. Morgan, EPFR, and Macrobond

According to analysis by J.P. Morgan, global equity fund investors have become heavily underexposed to EM equities following a long period of EM underperformance.

Chart 18

ROLLING 360-DAY VOLATILITY FOR MSCI EM VS MSCI EAFE AND THE S&P 500

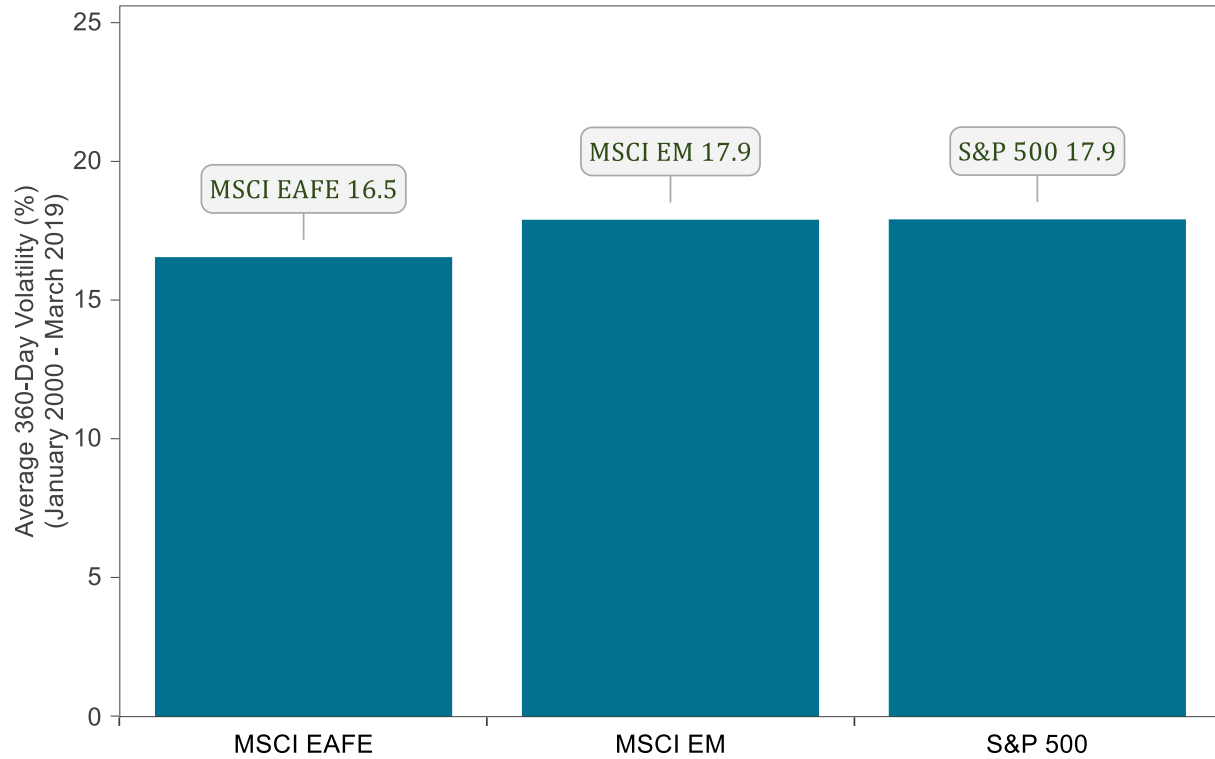


Source: Bloomberg and Macrobond

EM equities have recently been less volatile than U.S. equities, as has been the case during many periods since the late 1990s.

Chart 19

VOLATILITY SINCE 2000 HAS BEEN COMPARABLE FOR EM AND S&P 500; SLIGHTLY LOWER FOR MSCI EAFE

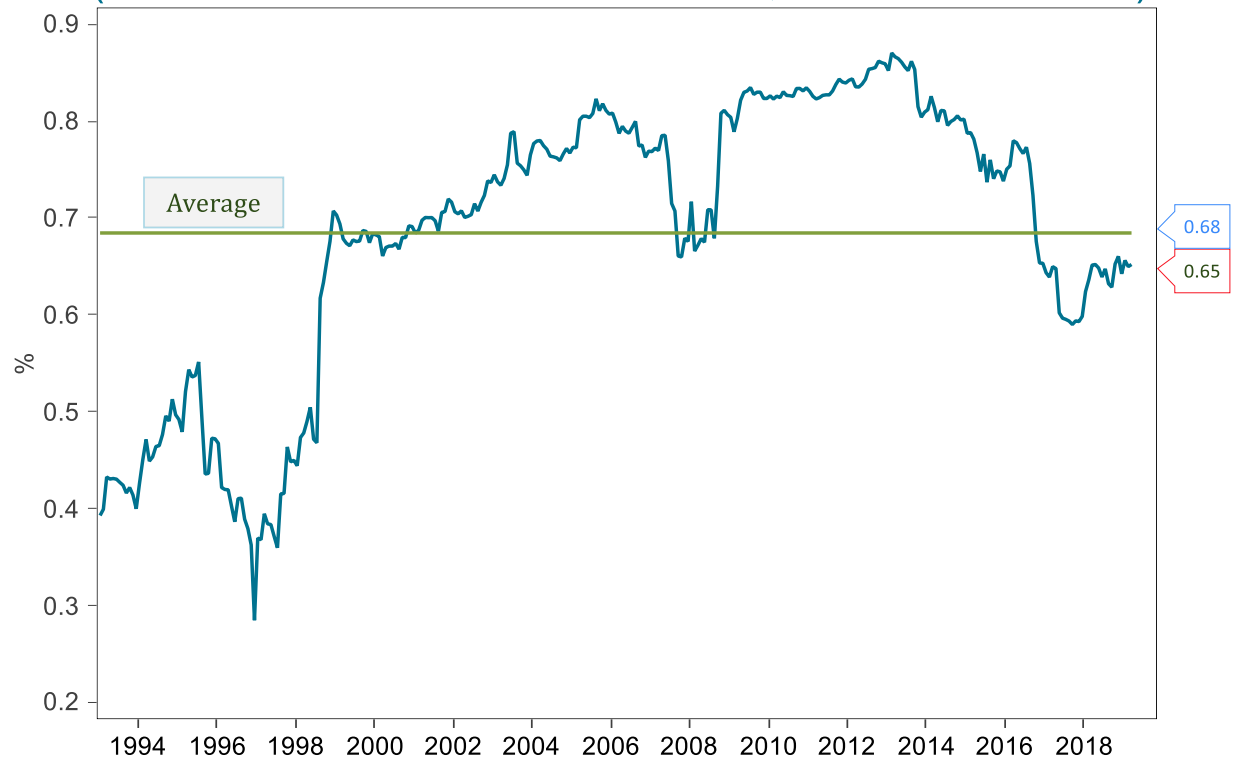


Source: Bloomberg and Macrobond

On average since 2000 EM equities have had the same degree of volatility as U.S. equities, but slightly higher volatility than non-U.S. developed (MSCI EAFE) equities.

Chart 20

5-YEAR ROLLING CORRELATION - MSCI EM VS S&P 500 (JANUARY 1988 to MARCH 2019, MONTHLY DATA)



Source: GW&K Investment Management, Bloomberg, and Macrobond

The 5-year rolling correlation of monthly changes in the MSCI EM Index with those of the S&P 500 Index is currently just 0.65, in line with its long-term average.

Table 2

Middle-class Consumption - Top 10 Countries, 2015, 2020, and 2030
(PPP, Constant 2011 Trillion \$USD and Global Share)*

Country	2015	Share (%)	Country	2020	Share (%)	Country	2030	Shares (%)
U.S.	4.7	13	China	6.8	16	China	14.3	22
China	4.2	12	U.S.	4.7	11	India	10.7	17
Japan	2.1	6	India	3.7	9	U.S.	4.7	7
India	1.9	5	Japan	2.1	5	Indonesia	2.4	4
Russia	1.5	4	Russia	1.6	4	Japan	2.1	3
Germany	1.5	4	Germany	1.5	4	Russia	1.6	3
Brazil	1.2	3	Indonesia	1.3	3	Germany	1.5	2
U.K.	1.1	3	Brazil	1.2	3	Mexico	1.3	2
France	1.1	3	U.K.	1.2	3	Brazil	1.3	2
Italy	0.9	3	France	1.1	3	U.K.	1.2	2

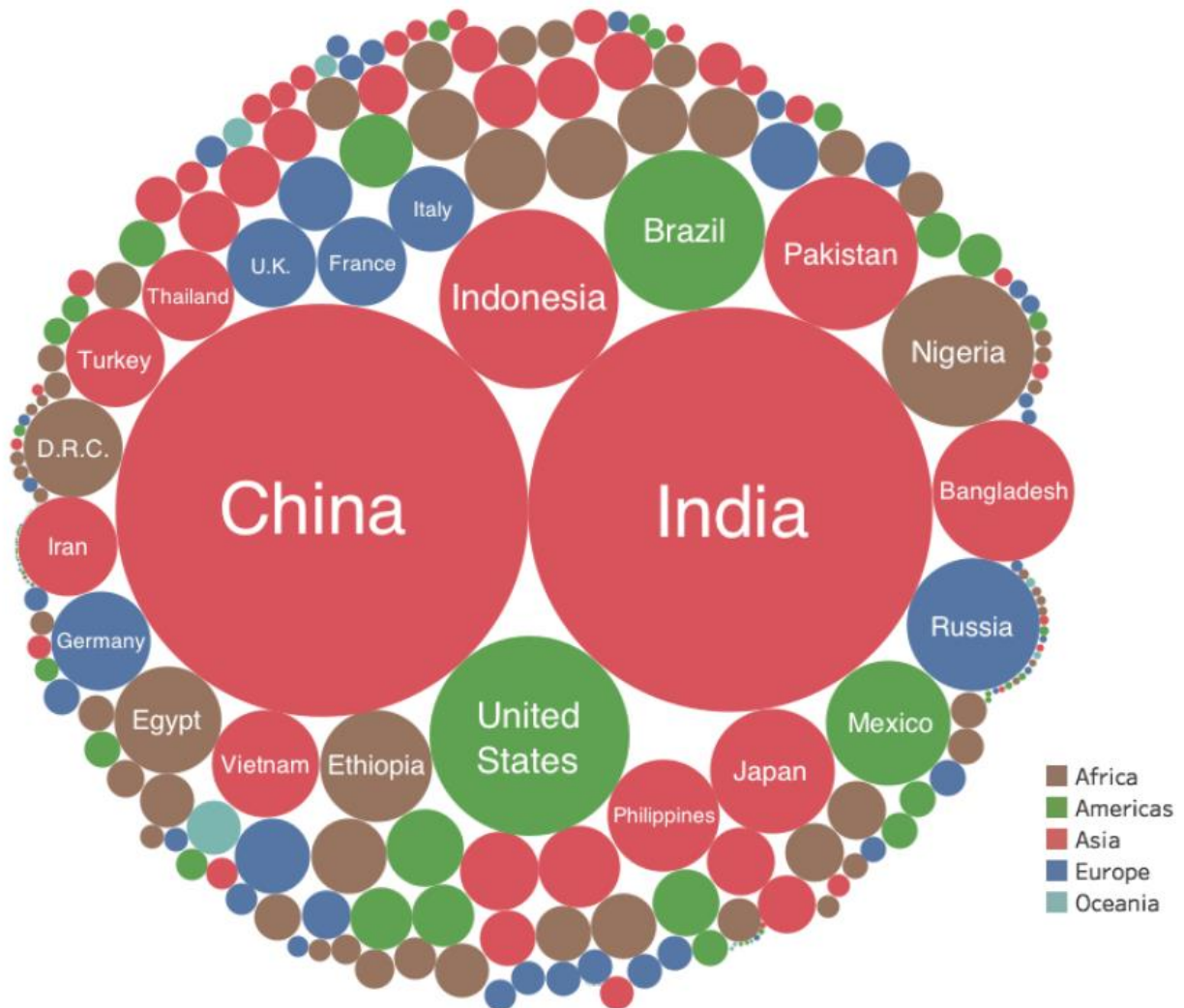
*Note: The author's definition of middle-class implies a range of annual income for a four-person household of \$14,600 to \$146,000.

Source: [Homi Kharas, "The Unprecedented Expansion of the Global Middle Class: An Update," *Global Economy & Development Working Paper 100*, Brookings Institute, February 2017](#)

The Brookings Institute expects the global share of middle-class consumption by China and India will rise from 18% in 2015 to nearly 40% in 2030, while the U.S. share declines from 13% to 7%.

Chart 21

Countries by Population Size



Source: [Visual Capitalist](#)

The U.S. currently represents about 4% of the world's population but accounts for roughly 50% of all listed global equities.

Disclosures:

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