the authorities to prop up the market lead to a rise in liquidity, contributing to a bubble subsequently, that is then tackled by direct controls.

The policy implication is that controlling domestic liquidity is necessary to avoid the buildup of a bubble. Strict external capital controls *by themselves* cannot prevent excess stock market volatility. In 2015, the MSCI index fluctuated less than the Shanghai index.[42]

6.9.3　Correlation between Emerging Markets and S&P Index

Both equity markets respond strongly to monetary policy changes and to the federal funds rate, but the reaction of emerging markets is stronger. Figure 6.h plots annual returns from end-1995 to end-2015.
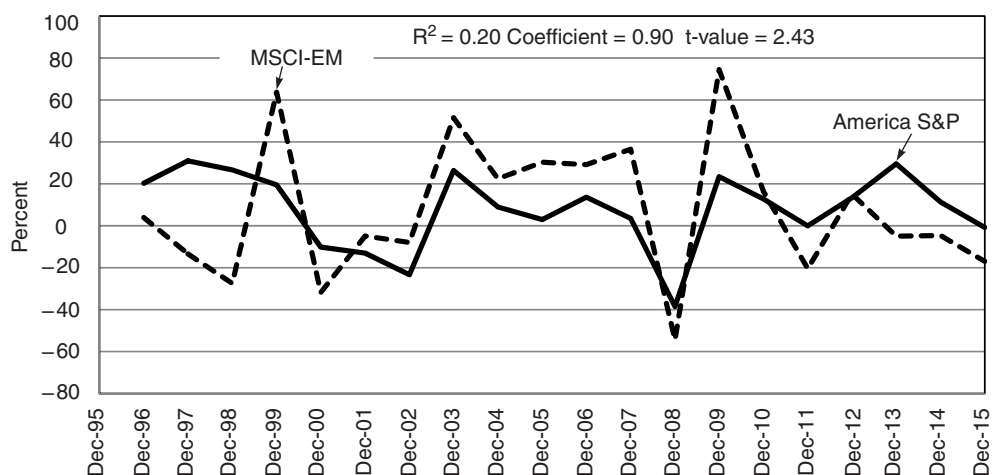

Figure 6.h Annual Returns in Emerging Markets versus USA

Source: Bloomberg

In 2003, when the federal funds rate was lowered both markets rose but the emerging markets yielded 52%, roughly doubled that of S&P. Similarly in 2009 in the rebound after the Global Financial Crisis emerging markets rose more. With growth in emerging economies likely to remain weak, and if there are hikes in the funds rate in the remainder of 2016, emerging markets are likely to under perform.

Looking beyond the near term, one of the stated benefits of investing in emerging markets for global investors is portfolio diversification. Academic finance theory such as the

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[42] At the time of the Asian crisis, the domestic Chinese market did not experience the volatility in the MSCI, leading many to prematurely conclude that external capital controls would ensure market stability.

Capital Asset Pricing Models states that when the returns to assets are negatively correlated, one can increase the returns on one portfolio by holding a combination of them. Whether the returns are negatively correlated or not is a factual issue. It can be seen from the values reported in Figure 6.h that the positive correlation is high and significant. This implies that there is no diversification benefit.

However, this conclusion may not be fully warranted. While the correlation between the two (MSCI-EM and S&P) markets is strong at higher frequencies, it gets weaker at lower frequencies. (The term frequency here refers to the interval over which the returns are calculated: e.g., daily, weekly, yearly etc.) At a weekly frequency, the correlation between S&P and the emerging markets returns is *much stronger* than for the lower annual frequency.[43] At the other extreme, consider the 10 year period from December 1999 at the height of the dot com boom to December 2009 the MSCI emerging market index rose by 102% while the S&P fell by 57.5%, yielding annualised returns of 7.3% and −2.7% a huge 10 percentage points difference (see Appendix Table 6.L). There is likely to be negative correlation for returns between S&P and emerging markets when held over long periods such as decades. For 'buy and hold' investors, there may be substantial gains from diversification.

The main conclusion of this Section on emerging market equities can be summarised as follows: First, over the period 1995-2015, US equity outperformed the emerging markets as a whole with substantial variation across the BRICS. Second, to global investors in dollars, China has given the least, while Russia's returns hugely depend on the choice of base year. Third, while the lowest returns to China fits in with prevailing view that high growth does not generate high equity returns, the better performance of Shanghai versus the MSCI China index may also be due to capital account restrictions on overseas investors in the mainland market. Fourth, for India, returns to global investors has been slightly higher than real returns to domestic investors.

Looking ahead, for global investors, those emerging markets with remaining capital controls, and that are liberalising, are likely provide higher returns than the US and developed markets. Finally, for investors with long horizons, the benefits from diversification can be significant since over *long* holding periods, returns across emerging and developed markets may be negatively correlated.

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[43] For 2015, the adjusted R^2 for weekly returns from a regression of MSCI-EM on S&P is 0.58, the intercept is insignificant, as in Figure 6.h above, and the slope is 1.05 with a t-value of 8.39.