

INVESTMENT RETURNS IN THE US, INDIA, BRAZIL, EUROPE & MEXICO: 20-YEAR COMPARISON

The recent declines in US equities have placed a good deal of negative attention on the performance of the US equity markets. We at LCR Wealth see this as a good time to review the real returns of the US equity markets from a global perspective. We get the real returns by adjusting the nominal returns for inflation and currency. We will compare the US to three other major markets to evaluate their real returns over the last 22 years.

We have chosen four stock indices to best represent the comparable equity market of the country or region being evaluated. Table 1 lists each index, the country/region that it represents, and the currency used to price each index.

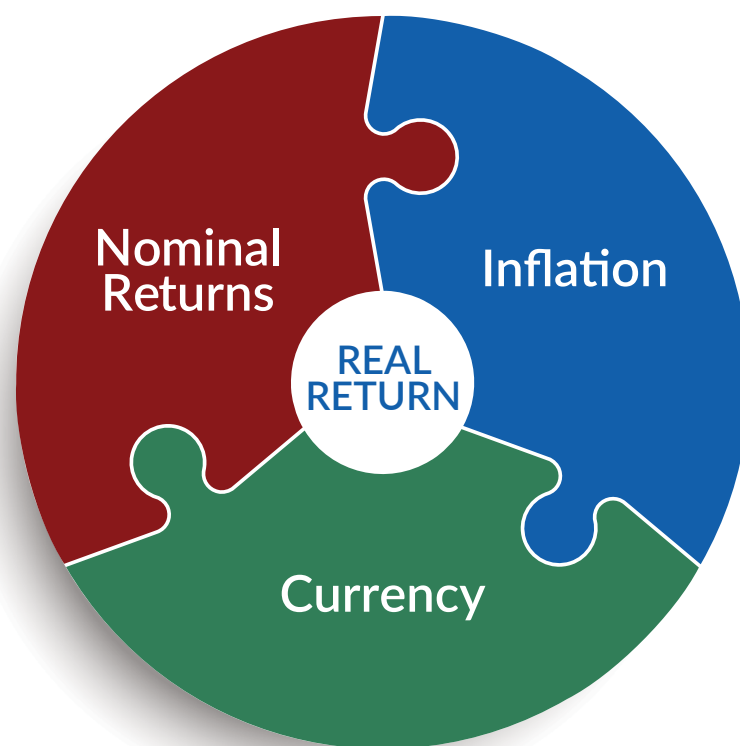


Table 1. Four International Equity Indices, with Relevant Currencies

Country or Region	Equity Index	Currency
United States	S&P 500	US dollar
India	Nifty 50	Indian rupee
Brazil	Ibovespa	Brazilian real
Eurozone	Euro Stoxx 50	European euro

We base our analysis over a 22-year period, from Dec 31, 1999, through Dec 31, 2021. The time period begins at the peak of the dot-com era, which crashed in March 2000, so the chosen period does not favor any of the four indices.

To evaluate the performance of these indices, we looked at the annual gross return, also called the “nominal return,” of each index. Figure 1 below shows these nominal returns over the 22-year period from the start of 2000 through the end of 2021 for an investment of 100,000 units of the local currency. The figure displays the percentage change in the value of a 100,000 unit investment in that index, with no fees or other adjustments factored in. However, the calculation does assume the reinvestment of all dividends and distributions.

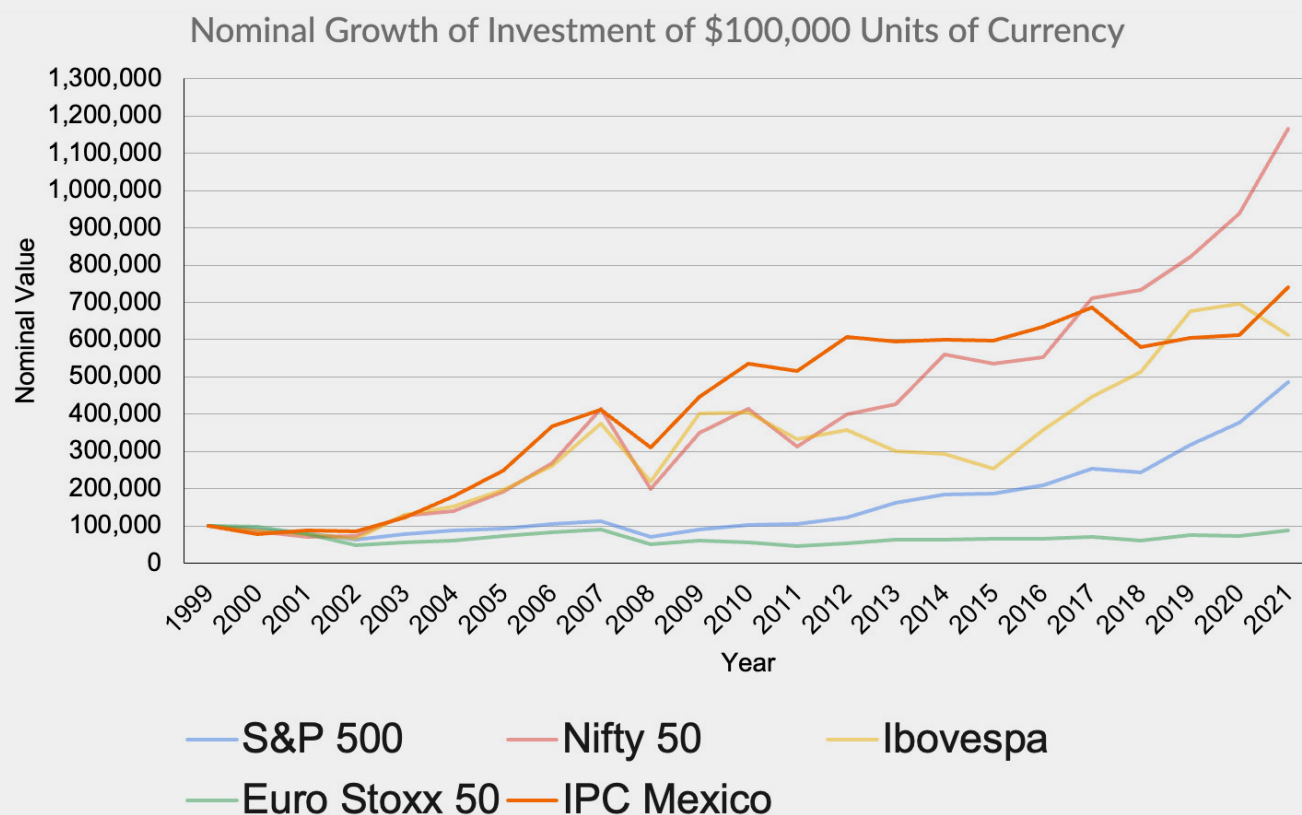


Figure 1. Comparison of the nominal returns on 100,000 units of the local currency invested over the 22-year period in the **S&P 500** (United States, the dollar), **Nifty 50** (India, the rupee), Ibovespa (Brazil, the real), and **Euro Stoxx 50** (European Union, the euro) indices.

The Indian **Nifty 50** dominates the other indices with its nominal return of 1065%, compared with the 386% return of the **S&P 500**, the 513% return of the Ibovespa, and the -12.5% return of the **Euro Stoxx 50**.

The outperformance of the **Nifty 50** against the other indices is dramatic and could easily convince an investor to favor the Indian equity market over comparable alternatives. However, it would be misguided to use nominal returns as the only metric of investment performance. The reason is that inflation lowers the purchasing power of an investment's value. Inflation effectively nullifies some of the return of the index. If inflation is 1% and the index has a nominal return of 1%, the inflation-adjusted return on the investment would be 0%.

In this hypothetical example, the local purchasing power of the currency decreased at the same rate that the index increased, resulting in no change. We can apply this same adjustment for inflation to the nominal returns using actual annual inflation data for the four currencies identified in the table.

When we adjust the nominal returns for the annual inflation rate of each currency, we arrive at the following analysis, as shown in Figure 2.

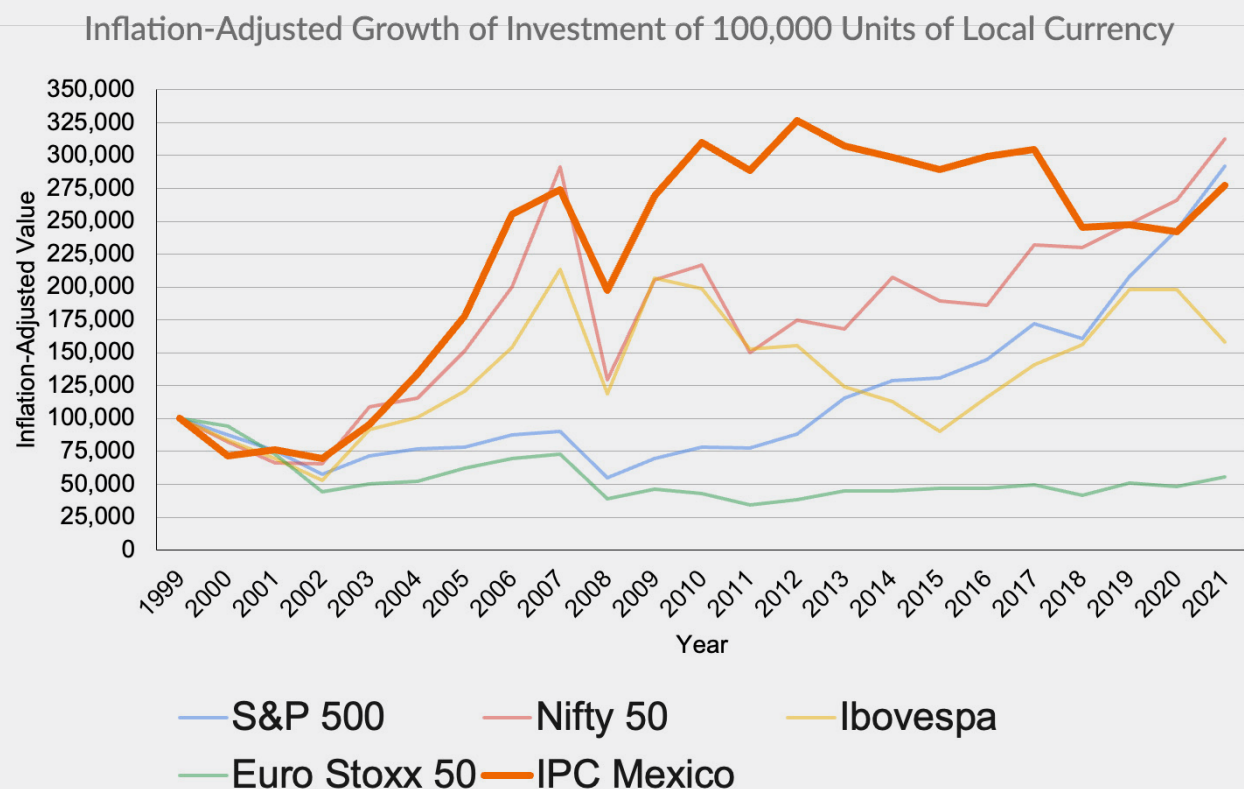


Figure 2. Comparison of inflation-adjusted returns on 100,000 units of the local currency invested over the 22-year period in the **S&P 500** (United States, the dollar), the **Nifty 50** (India, the rupee), the **Ibovespa** (Brazil, the real), and the **Euro Stoxx 50** (European Union, the euro) indices.

The adjustment for inflation significantly affects the returns over the 22-year period. The **Nifty 50** is still the top performer, with an inflation-adjusted return of 213%. The effects of inflation become more pronounced when we compare the Ibovespa with the **S&P 500**. The **S&P 500** still returned 192% after the adjustment for inflation, but the Ibovespa returned only 58%. This is in stark contrast with the nominal-return-only analysis, in which the Ibovespa outperformed the **S&P 500** by more than 100%.



Graphing the annual inflation rate of the four currencies, as shown below in Figure 3, can clarify one's understanding of the changes seen between our above observations in Figures 1 and 2.

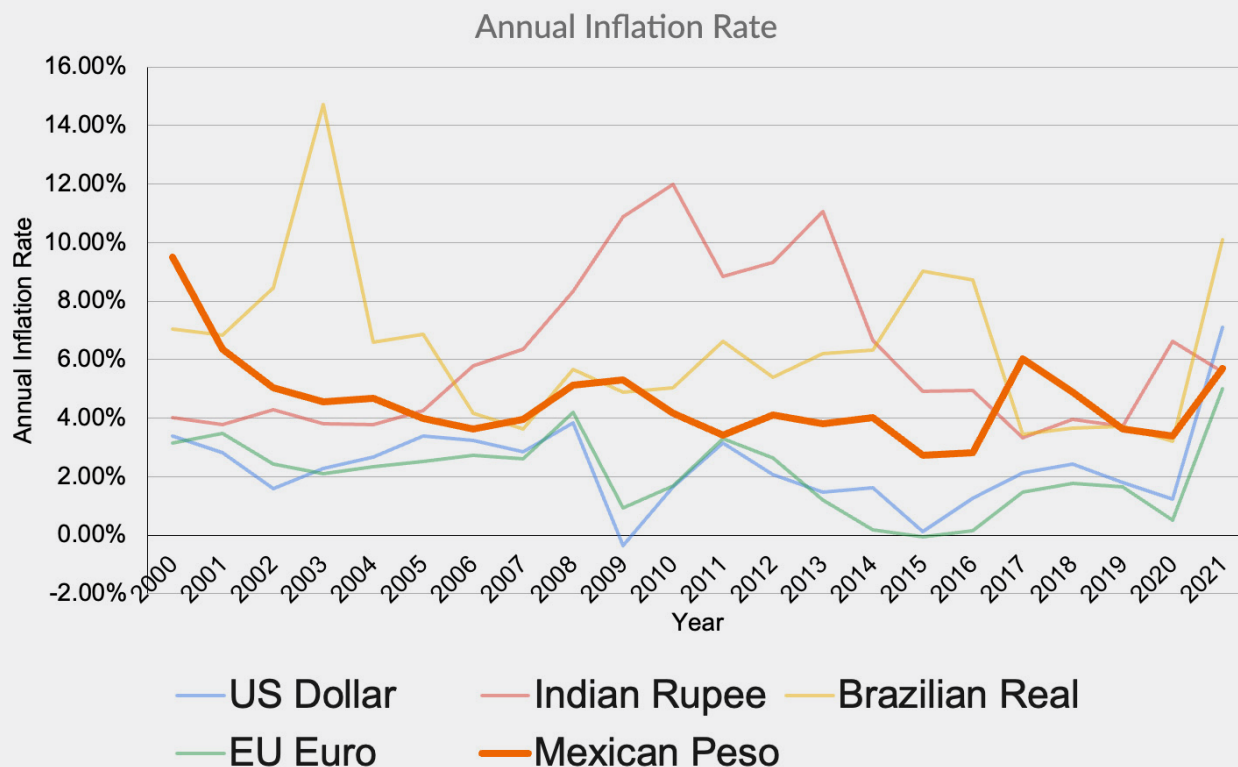


Figure 3. Comparison of the annual inflation rate of the four currencies over the 22-year period from 2000 to 2021.



You may notice that all of the currencies, with the exception of the Indian rupee, saw an increase in the inflation rate from 2020 to 2021. As the world continues to emerge from the COVID-19 pandemic, supply constraints and tightening monetary policy across the globe have brought inflation to the forefront of global investment concerns.

Both the Indian rupee and the Brazilian real saw annual inflation of over 10% in certain years and have average inflation rates higher than 5%, consistently much higher than those of the US

dollar and the euro. This helps explain why the downward adjustments to the nominal returns of the [Nifty 50](#) and the Ibovespa are much greater than those of the [S&P 500](#) and the [Euro Stoxx 50](#).

Another major factor to consider when comparing investments in different countries and currencies is the effect of changes in exchange rates. Changes in exchange rates affect the return of an investment in terms of “purchasing power parity” or (PPP). To show the value of the investments in purchasing power parity, we have to value all of the investments in the same currency.

LCR client families are global in nature, and, because of this, changes in the purchasing power of investments can have a major impact on the performance of those investments.

To illustrate this, Figure 4 below, which displays the performance of a US \$100,000 investment in each of four indexes across the 22-year period.

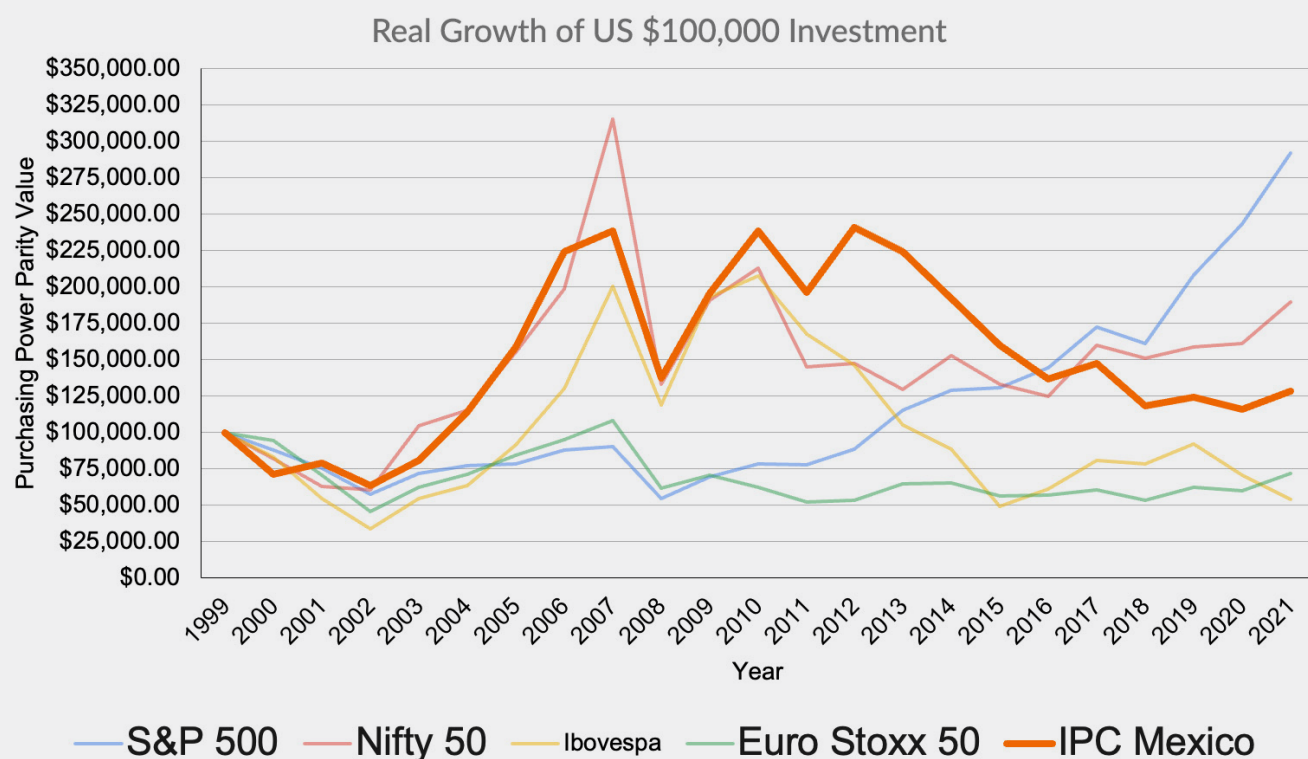


Figure 4. The purchasing power parity (PPP) values of US \$100,000 invested into four equity indices across 22 years.

This process is the same as taking US \$100,000, converting it into the local currency, investing in the local index, adjusting for inflation, and then exchanging the year-end value back into US dollars. Since we are using US dollars as the constant, there is no adjustment to the 192% return of the **S&P 500** that appears in Figure 2.

Figure 4 above highlights the strengthening of the US dollar versus the Indian rupee and Brazilian real over the last 22 years. Even though the **Nifty 50** had a higher inflation-adjusted return than the **S&P 500**, the rupee did not gain as much value as the US dollar did between 2000 and 2021. As a result, an investment of US \$100,000 in the **Nifty 50** would have grown only to a value of \$190,019, a return of 90%, whereas the same investment in the **S&P 500** would have grown 192% to \$292,237.



The Brazilian real shows a similar change in US dollar value, in that its return in US dollars over 22 years dropped significantly by -46%. The Indian rupee and the Brazilian real weakened versus the US dollar to the extent that their respective indices went from outperforming the **S&P 500** to underperforming it.

Of the three non-US currencies, only the euro strengthened versus the US dollar during the time period. However, the **Euro Stoxx 50** still has a negative return of -28.5% in terms of US dollars, indicating that the strengthening of the euro against the US dollar has not been substantial enough to offset the inflation-adjusted losses.

These adjustments for inflation and exchange rates are complex, but they are important considerations for today's global investor. As inflation, monetary policy, and exchange rates fill the markets with uncertainty, it is essential to make prudent decisions regarding the whole range of investment opportunities.

Over the 22-year period, the **S&P 500** outperformed the other major indices by 100% or more in PPP terms. This outperformance will be the same if we run the evaluation using any of the other three currencies as the constant against the US dollar.



The US market, as measured by the **S&P 500**, has vastly outperformed the Indian market, the Brazilian market, and the European market over the last 22 years. This outperformance extends through black swan events that caused major declines in the **S&P 500** index, including the Dot-Com Crash, the Global Financial Crisis, and the COVID-19 Pandemic.

Even though past performance can never guarantee future results, it is certainly a tool that can be used in investment decision-making. Adjusting for inflation and exchange rates allows us to look beyond nominal returns and see the strength of the **S&P 500** over the last 22 years. To that end, we recommend that non-US investors give heavy consideration to allocating a portion of their portfolio to the US equity market.

Invest in the US: Historical Analysis of Investment Returns

IPC Mexico Appendix

As an addition to our white paper, “Investment Returns in the US, India, Brazil, and Europe: 20-Year Comparison,” LCR Wealth has analyzed the historical performance of the IPC Mexico Index, a total equity market index. The analysis was performed on data from the start of 2000 to the end of 2021.

As you can see in Figure 1, the IPC Mexico Index had a gross return of 641.37% over the 22-year period, which represents a 10.01% annualized rate. The IPC Mexico Index had the second-highest gross return in the analysis, behind India, which had a gross return and annualized rate of 1064.98% and 12.40%, respectively.

Looking at these results, it is easy for investors to think that the Mexican index has dramatically outperformed the other indices with the exception of India’s Nifty Fifty. What most people fail to consider are the two main factors impacting real investment returns: inflation and currency.

Inflation lowers the purchasing power of the currency experiencing the inflation. Inflation is a complex subject, but for the purposes of this analysis it’s important to note that inflation lowers real investment returns. Imagine an investor puts 100 pesos into the market in January 2022, gets a 5% return, and then sells in January 2023. They now have 105 pesos. However, if inflation is also 5%, this effectively nullifies the investment returns. Each peso can buy slightly less in goods and services now in January 2023 than in January 2022. Figure 2 shows what happens when we adjust the investment returns for the inflation of the peso over the same period and do the same for each index and its respective currency.

Because of inflation, the adjusted annualized return of the IPC Mexico Index falls by more than half, from 10.01% to 4.59%. You can see that this impact was significant for the Indian Nifty Fifty index as well. Comparatively, the US S&P 500 was hit with a much smaller impact. Why? Inflation rates differ for each currency. The US dollar has the most stable and consistently low inflation among the five currencies in this analysis. This can be seen in the Figure 3, which shows the inflation rate for each currency and for each year in the analysis period.

Inflation-adjusted return is the best measure to use for domestic investors. If all your income and expenses are in pesos, then the only factor that needs to be heavily considered is the inflation of the peso. Many LCR clients, however, are global in nature, which means that they have income and/or expenses denominated in other currencies, primarily USD. For these investors, there is another adjustment to the index returns that needs to be considered: changes in the USD–MXN exchange rate.





By adjusting the returns for changes in the exchange rate, we are putting all the indices in the analysis in the same terms. Essentially, we're looking to make an "apples-to-apples" comparison. If the peso has depreciated against the US dollar, then any investment returns in pesos will be lower when priced in US dollars, and vice versa if the peso has appreciated against the US dollar. The inflation-adjusted returns, priced in USD, appear in Figure 4.

Here the outperformance of the S&P 500 becomes clear. Due to the low inflation of the US dollar and the relative appreciation of the US dollar versus the peso as well as the other

currencies in the analysis, the S&P 500 outperforms when returns are put in terms of purchasing power parity. The annualized return of the IPC Mexico Index, when priced in USD and adjusted for inflation, is just 1.19%.

The best way to address this underperformance for Mexican investors is to diversify into the US markets. Adding a 20% allocation to the S&P 500 brings the annualized return to 2.31%. It also lowers the standard deviation, or risk, of the investment from 24.88% to 22.02%. The benefits of diversification can be seen clearly in this example. Adding investments denominated in US dollars lowers historical risk while increasing historical returns at the same time.