

## CURRENCY CONCERN: DEPRECIATION OF THE DOLLAR

*Article contributed by Dimensional Fund Advisors*

### Currency Concern: A Weak US Dollar

Despite the impressive rise of the US stock market in 2009, the value of the US dollar depreciated significantly as the US economy continued to deal with the aftermath of unprecedented stimulus and bailout programs. Stagnated economic growth, tempered tax revenues, and large trade deficits further stoked widespread fiscal concern. As the US dollar has slumped from previous highs, currency concerns have become a prime focus for many US investors.

There are many factors that impact the value of the US dollar. A few explanations for the recent decline might include:

- The dollar is experiencing a reversal of notably positive 2008 appreciation, which was caused by the flight to quality into US government bonds.
- Central banks have recognized heightened risk in the US economy and fewer reserves are being held in dollars due to concerns about US fiscal policy, potential inflation, and large trade deficits.
- US and international investors are more optimistic about riskier assets abroad as opposed to being fearful about the US assets.

It is likely that a combination of these and other factors has weakened the dollar. In response to these concerns, this brief will address the following topics:

- Exchange rate dynamics
- Implications to investor wealth
- Benefits of currency exposure

### Exchange Rate Dynamics

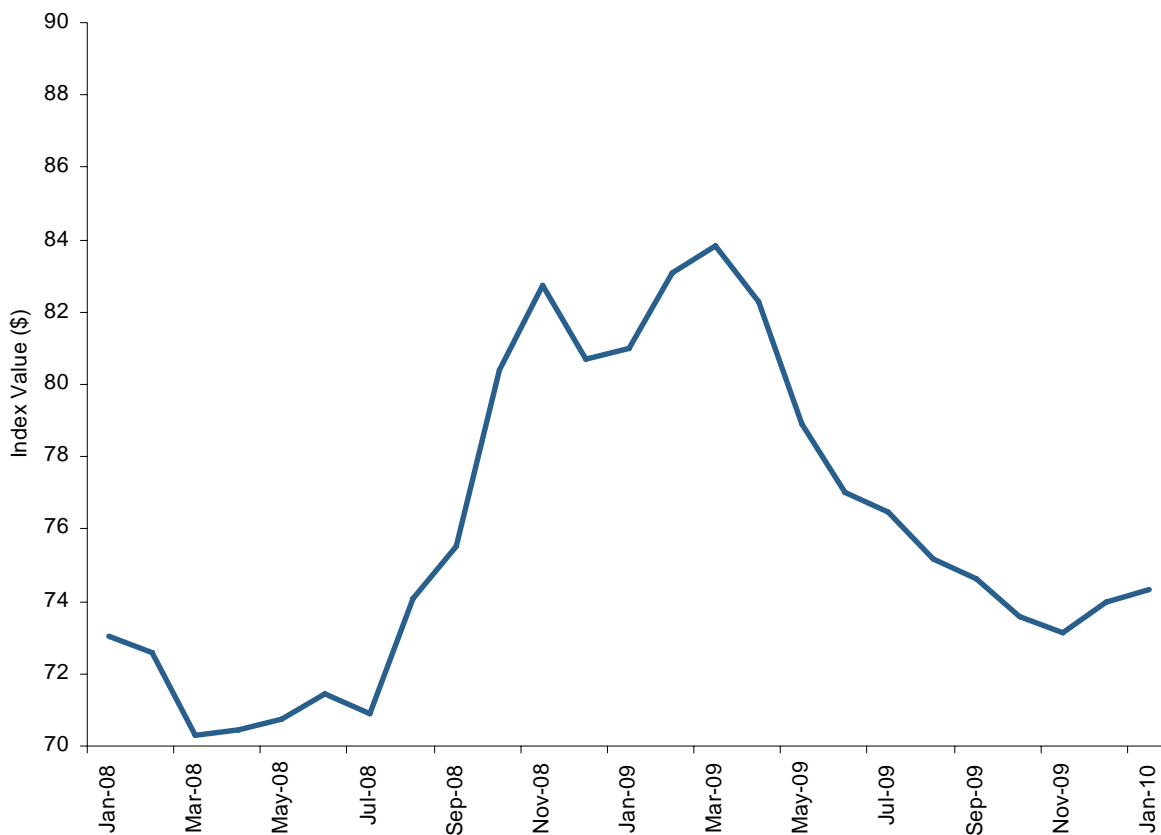
Some media outlets paint the picture of a weakening dollar that is in a tailspin. While the dollar may or may not decline further, it is important to distinguish between a dollar that has already weakened and one that is continuing to weaken.

Once currency risk is recognized, it is immediately factored into prices by market participants. Exchange rates are determined by supply and demand. Market expectations are impounded in today's rates. This is an important point because investors tend to assume that current economic variables, such as trade deficits, predominantly drive changes in currency rates. This is largely a misconception. Current fundamentals impact prices less than expectations about future fundamentals.<sup>1</sup>

Today's rates are tied to today's expectations about the future. Investors should consider that this is an extremely complex, multi-dimensional relationship between many different currencies. There is no reliable way to forecast these changes. In fact, some researchers have found that exchange rates approximately follow a random walk<sup>2</sup>, which is to be expected given the unpredictability of the future.

The marked decline of the US dollar in 2009, against most international currencies, offers a vivid example of the dynamic market pricing mechanism. The graph below shows the value of the US dollar versus a trade weighted exchange index of major currencies.

*Trade Weighted Exchange Index of Major Currencies versus the US Dollar  
January 2008 through January of 2010*



Past performance is no indication of future results. Data is courtesy of the Federal Reserve website. The graph depicts a weighted average of the foreign exchange value of the US dollar against a subset of broad index currencies that include Euro Area, Canada, Japan, UK, Switzerland, Austria, and Sweden.

The above data highlight a couple interesting points:

- The US dollar was the currency of last resort, as demonstrated by its rise in value in 2008.
- Despite its recent decline, the dollar has about the same relative value as it did in September of 2008, when Lehman filed for bankruptcy.

Prior to the recent recession, many economists speculated that foreigners would tire of America's gaping external deficit.<sup>3</sup> They argued that this outlook would send the US dollar into a slump and interest rates soaring. The opposite occurred.

As the financial crisis spread to the rest of the world, the dollar strengthened as investors sought safety in US Treasury Bills. Despite the lingering concerns about the US economy, the dollar was the currency of last resort, as demonstrated by the 19% increase in value from March 2008 to March 2009.

This trend reversed in March 2009. The dollar fell more than 12% from March through October 2009. It is possible that part of the recent decline was due to the unwinding of 2008 appreciation as global markets stabilized.

Investors should also consider that currencies do not have a positive expected return. This is highlighted by the graph below that shows the value of the US dollar versus a trade weighted exchange index of major currencies from 1973 through 2009. Since 1973, the dollar has gradually decreased in value but changes have been largely random.

## Trade Weighted Exchange Index of Major Currencies versus the US Dollar January 1973 through January 2010



Past performance is no indication of future results. Data is courtesy of the Federal Reserve website. The graph depicts a weighted average of the foreign exchange value of the US dollar against a subset of broad index currencies that include Euro Area, Canada, Japan, UK, Switzerland, Austria, and Sweden.

Unlike stocks or bonds, currencies do not produce an earnings stream. Currency trading is, therefore, highly speculative. As a zero sum game, each trade has a winner and loser. It becomes a negative sum game after accounting for costs.

### Implications on Investor Wealth

A weak dollar means different things to different entities. The people hurt the most are those who earn in dollars but spend their wealth overseas, such as US travelers abroad and US consumers who purchase foreign goods. Those who earn US dollars and spend on US goods and services are less affected by the dollar's change in value, though higher foreign input costs may impact domestic consumption.

A weak dollar will help stimulate US exports, which could aid economic recovery. This could help the many US businesses that generate significant earnings outside the US. For example, there are more than 20 companies in the S&P 500 with over 50% of their revenues earned abroad. This list includes prominent American companies such as Ford Motor, McDonald's, Google, Pfizer, HJ Heinz, and Hewlett-Packard. Corporate and worker earnings that are repatriated from abroad are higher when converted from foreign currency to US dollars.

Many investors assume that a weak US dollar will curtail US capital market returns. Historically, the opposite has occurred. Consider US stock market and currency performance in 2008 and 2009 below.

## Recent US Stock Market and Dollar Performance

	2008	2009
US Dollar	10.89%	-8.23%
S&P 500 Index	-37.00%	26.46%

Past performance is no indication of future results. S&P 500 Index data is courtesy of Standard & Poors. US dollar index values courtesy of the Federal Reserve. The US dollar performance is calculated using the weighted average of the foreign exchange value of the US dollar against a subset of broad index currencies that include Euro Area, Canada, Japan, UK, Switzerland, Austria, and Sweden.

The dollar performed well when the market performed poorly and vice versa. Clearly, most investors would prefer the 2009 results.

Most investors appropriately avoid putting too much stock in noisy, short-term returns. The table below highlights performance of some major indices during months of dollar appreciation and depreciation over longer periods of time (first available month used for each index).

### Stock Market Performance during Months of US Dollar Appreciation and Depreciation January 1990 through August 2009

	CRSP 1-10	Merrill Lynch US Corp and Govt Index 1-3 Years	Citigroup World Govt Bond Index 1-3 Years (hedged)	Citigroup World Govt Bond Index 1-3 Years (unhedged)	MSCI World ex. US (unhedged)
Annualized Average Return (%)	11.23	6.15	5.59	7.42	11.23
Annualized Standard Deviation	16.17	1.82	1.25	5.27	17.38
Annualized Average Return (%)					
Months with USD Appreciation	3.31	5.16	5.56	-6.12	-13.86
Months with USD Depreciation	19.48	7.13	5.62	21.76	41.92
Sample Period Start Date	Feb-73	Jun-86	Jan-90	Jan-85	Feb-73

Past performance is no indication of future results. Dollar appreciation measured against a trade weighted exchange index of major currencies. Exchange rate data provided by the Federal Reserve Bank of St. Louis: <http://research.stlouisfed.org/fred2/series/TWEXMMTH/downloaddata?cid=105>. CRSP 1-10 data provided by the Center for Research in Security Prices, University of Chicago. Merrill Lynch US Corporate and Government Index 1-3 Years provided by Merrill Lynch. Citigroup World Government Bond Index 1-3 Years (unhedged) and Citigroup World Government Bond Index 1-3 Years (hedged) provided by Citigroup (formerly Salomon Smith Barney). MSCI World ex USA Index (gross div.) provided by MSCI.

This data de-links the notion that a strong dollar leads to positive stock market returns, particularly in the US. Exchange rates are just one of a myriad of factors that influence stock returns.

Note the different results across hedged and unhedged fixed income indices. There is no difference in the hedged index returns across the two states (appreciation versus depreciation months). Investors that view fixed income as a volatility dampener should consider hedged international bonds.

These data do not suggest or validate a dollar based timing strategy. As discussed previously, researchers have demonstrated that currency fluctuations are highly unpredictable.

## Benefits of Currency Exposure

To demonstrate the benefits of currency exposure, consider the mechanics of people in the US investing abroad. International securities are purchased and held in local currency. Upon sale and repatriation of international investment proceeds, appreciated local currency converts into more dollars. As such, a declining dollar will boost the returns of international investments.

An unhedged, globally diversified equity portfolio is, therefore, an excellent hedge against a weak dollar. Performance of developed and emerging market countries in 2009 nicely illustrates this point. The difference between the dollar and local currency return represents the currency impact in the table below.

*One Year Developed and Emerging Market Country Performance  
As of January 1, 2010*

Developed Markets	Return in USD	Return in Local Currency	Impact of Currency	Emerging Markets	Return in USD	Return in Local Currency	Impact of Currency
Australia	68.78%	30.84%	37.94%	Brazil	121.25%	65.39%	55.86%
Norway	82.51%	50.57%	31.94%	Chile	81.41%	44.40%	37.01%
New Zealand	43.01%	14.86%	28.15%	South Africa	53.39%	22.18%	31.21%
Canada	52.70%	29.68%	23.02%	Indonesia	120.75%	90.27%	30.48%
Sweden	60.17%	44.61%	15.56%	Russia	100.32%	81.08%	19.24%
UK	37.34%	22.28%	15.06%	Colombia	76.50%	60.36%	16.14%
Belgium	54.26%	49.45%	4.81%	Korea	69.42%	56.63%	12.79%
Austria	38.40%	34.09%	4.31%	Mexico	53.07%	44.30%	8.77%
Netherlands	37.86%	33.57%	4.29%	India	95.20%	86.44%	8.76%
Singapore	67.29%	63.02%	4.27%	Thailand	70.04%	63.00%	7.04%
Denmark	35.24%	30.99%	4.25%	Czech Rep.	19.56%	13.94%	5.62%
Spain	36.46%	32.21%	4.25%	Turkey	92.00%	86.46%	5.54%
Portugal	35.38%	31.16%	4.22%	Poland	37.25%	32.56%	4.69%
France	27.64%	23.67%	3.97%	Philippines	60.24%	55.79%	4.45%
Italy	22.62%	18.80%	3.82%	Taiwan	75.14%	70.70%	4.44%
Greece	22.60%	18.78%	3.82%	Peru	69.30%	66.25%	3.05%
Germany	21.31%	17.53%	3.78%	Hungary	73.88%	71.23%	2.65%
Switzerland	22.93%	19.39%	3.54%	Morocco	-8.26%	-10.47%	2.21%
Ireland	9.91%	6.49%	3.42%	Malaysia	47.78%	46.25%	1.53%
Finland	7.23%	3.89%	3.34%	Egypt	32.77%	32.25%	0.52%
Hong Kong	55.20%	55.28%	-0.08%	China	58.81%	58.88%	-0.07%
Japan	4.44%	7.25%	-2.81%	Israel	50.04%	50.42%	-0.38%
Simple Avg	38.33%	29.02%	9.31%	Simple Avg	65.90%	54.01%	11.89%

Past performance is no indication of future results. These results do not take into account foreign investing taxation by the IRS. Data is courtesy of MSCI.

US investors that were diversified globally enjoyed significantly positive currency returns in 2009. These gains may principally offset higher consumption costs resulting from a weak dollar.

### The Net Take-Away

Currency risk should be addressed holistically in the context of investor and total portfolio objectives. Consistent with modern portfolio theory, most investors should integrate complementary asset classes with positive expected returns to balance portfolio risk and return goals. Currencies are volatile and do not have positive expected returns. As a result, targeted currency exposure can swamp portfolio returns and increase volatility.

In the absence of a reliable way to forecast currency movements, investors are generally better off focusing on controllable elements of investing, such as broad diversification<sup>4</sup>, cost minimization, and consistent exposure to compensating risk factors.

Most investors will find that diversified, unhedged international stock and bond holdings are the most reliable and cost effective way to guard wealth against a weak US dollar. However, hedged international bond holdings are generally prudent if the role of fixed income is intended to dampen portfolio volatility.

<sup>1</sup> Wang, Jian, 2008, "Why are exchange rates so difficult to predict?" Federal Reserve Bank of Dallas Economic Letter 3(6) June 2008.

<sup>2</sup> Meese, Richard A. and Kenneth Rogoff, 1983, "Empirical exchange rate models of the seventies: Do they fit out of sample?" Journal of International Economics 14, 3-24.

<sup>3</sup> Economist, "The diminishing dollar", October 22, 2009.

<sup>4</sup> Diversification neither assures profit nor guarantees against loss in a declining market. Proper diversification reduces company, industry, and country-specific risks.