CME Group

Commodities as a Potential Asset Class for Institutional Investors in Mexico

August 2011

The commodities asset class has become a standard component of diversified financial portfolios. The potential benefits of commodities in a portfolio include low correlations with equities and bonds, expected positive returns over time, and inflation hedging opportunities, which make exposure to this asset class attractive to investors. **Analysis conducted by the CME Group Research and Product Development team shows that investing in commodities may provide benefits to a Mexican institutional investors' risk/return profile, especially in terms of risk reduction.**

In the 20th century, institutional investors in Mexico for the most part invested in domestic government bonds and domestic equity. Although government bonds still account for the largest portion among assets held by Mexican institutional investors, during the past decade they have increasingly invested in more asset classes to achieve higher returns and to gain diversification. These new asset classes include, among others, foreign equity, corporate bonds, and private equity funds. Recently CONSAR, the regulator of pension funds in Mexico, approved pension fund investments in commodities of up to 10 percent of their assets under management. This opens new opportunities for Mexican institutional investors to enhance returns and reduce risk.

The goal of this analysis is to see what benefits investments in commodities can bring to already sophisticated portfolios managed by a typical Mexican institutional investor. We started the analysis by identifying benchmark indexes for major asset classes including Mexican domestic equity, Mexican domestic government fixed income securities, foreign equity, and commodities. For Mexican domestic equity, the IPC Index was chosen, which is the most widely recognized benchmark for Mexican stocks. The MSCI ACWI (All Country World Index), which covers 45 countries around the world, including all of the major developed and emerging markets, was selected for foreign equity. For Mexican domestic government fixed income securities, the Dow Jones LATixx Mexico Government BONOS 1-10 Year Index was chosen as the benchmark to represent short/medium term (1-10 years) investment, and the Dow Jones LATixx Mexico MGB10+ Index was selected as the benchmark for long term (>10 years) investment in fixed income securities.

For commodities, three indexes were identified: the S&P Goldman Sachs Commodity Total Return Index (GSCI), the Dow Jones-UBS Commodity Total Return Index (DJUBS), and the AlphaMetrix Commodity-Only CTA Index[1]. Both GSCI and DJUBS are benchmarks for passive investment in broad-based commodities. For an active investment in commodities, the AlphaMetrix Commodity-Only CTA Index is designed to track the active investment performance of Commodity Trading Advisors (CTAs) that trade solely or primarily commodity futures contracts or other liquid instruments representing the broad commodities sectors including agriculture, energy, precious and industrial metals, and softs/tropicals. This index utilizes an equal-weighting method among its nearly 100 constituent trading programs and funds.

In 1983, Professor John Lintner of Harvard University wrote a seminal paper entitled "The Potential Role of Managed Commodity – Financial Futures Accounts (and/or Funds) in Portfolios of Stocks and Bonds." He demonstrated that portfolios of equities and fixed income in the U.S. exhibit substantially less risk at every possible level of expected return when combined with managed futures, or CTAs. Our analysis tests if his theory remains valid when focusing on commodity-only CTAs and being applied to a country other than the U.S.

The data series used in the analysis are all monthly index values. Commodity-Only investing among CTAs is a relatively recent phenomenon, and the majority of programs fitting this description began trading between 2005 and 2007. Therefore the AlphaMetrix Commodity-Only CTA Index is only available starting in January 2006. The Dow Jones LATixx Mexico Government BONOS 1-10 Year Index and the Dow Jones LATixx Mexico MGB10+ Index are available beginning in January 2004. The index values for the other four indexes from January 1994 are obtained from Bloomberg.

[1] AlphaMetrix Alternative Investment Advisors is a Chicago-based hedge fund service firm

It should be noted that most commodities and all the major commodity indexes are denominated in US Dollars. From the perspective of a Mexican domestic investor, we converted all the US Dollar-denominated indexes to Mexican Peso-denominated by applying the contemporaneous exchange rate between the Dollar and Peso. This is actually assuming the investor will do no currency hedging and will take full currency risk.

Exhibit 1 shows the historical index values for the seven indexes used in the analysis. The AlphaMetrix Commodity-Only CTA Index is scaled as 800 in January 2006; the Dow Jones LATixx Mexico Government BONOS 1-10 Year Index and the Dow Jones LATixx Mexico MGB10+ Index are scaled as 600 in January 2004; and the other four indexes are scaled so that their index values are set as 100 in January 1994. This scaling practice makes it easier to compare the performance of the seven indexes in a single graph.

Exhibit 1: Scaled Historical Index Values

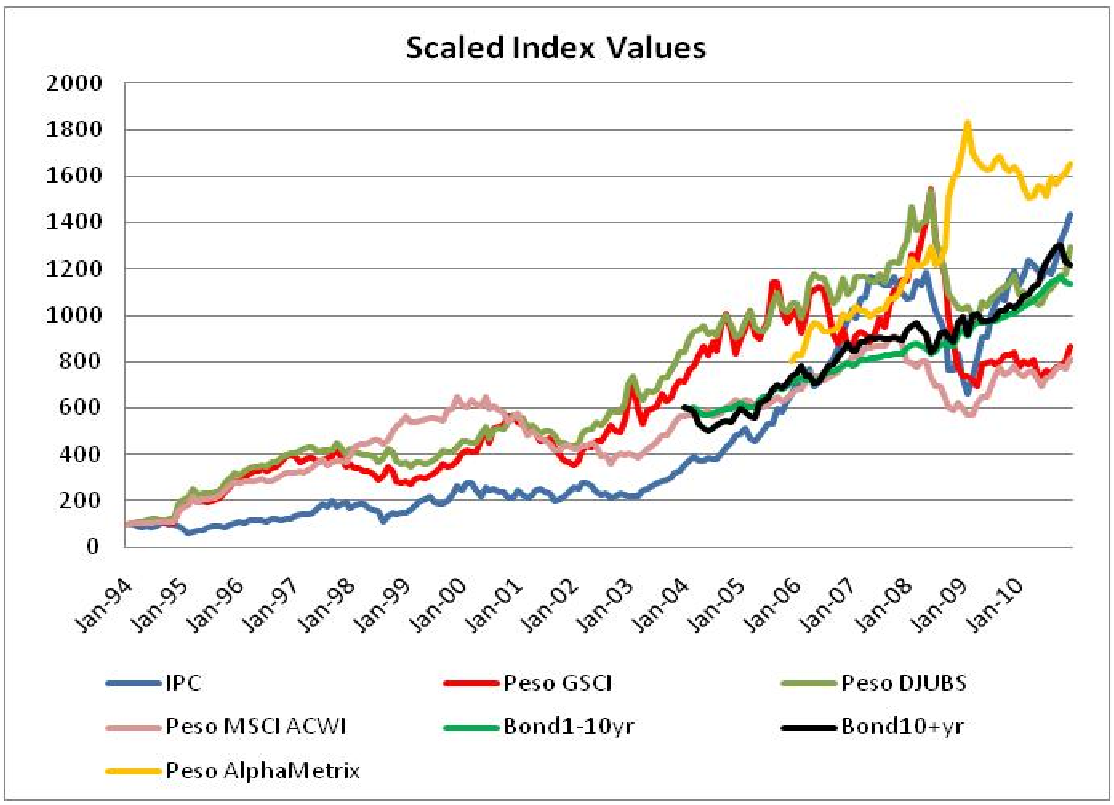


Exhibit 2 shows the historical risk/return profile of the seven indexes. The risks/returns of the three commodity indexes are situated between those of domestic equity and fixed income securities, which offer potential for increased returns. But the most significant benefit may come from the diversification effect provided by these commodity indexes as shown in Exhibit 3. All three commodity indexes have strong negative correlation with fixed income securities. Both GSCI and DJUBS have weak negative correlations with domestic equity and the AlphaMetrix index has strong negative correlation with domestic equity. The AlphaMetrix index also has negative correlation with foreign equity. In other words, all of the three commodity indexes can provide diversification benefits.

Exhibit 2: Historical Risk/Return Profiles of indexes Based on Monthly Returns Since Inception[2]

	IPC	MSCI ACWI (Peso Denominated)	Dow Jones LATixx Mexico Government BONOS 1-10 Year Index	Dow Jones LATixx Mexico MGB10+ Index	GSCI Total Return Index (Peso Denominated)	Dow Jones-UBS Total Return Index (Peso Denominated)	AlphaMetrix Commodity-Only CTA Index (Peso Denominated)
Annualized Return	17.0%	13.1%	9.5%	10.6%	13.5%	16.2%	15.7%
Annualized Std Dev	26.9%	17.1%	5.7%	12.6%	24.8%	19.1%	12.7%

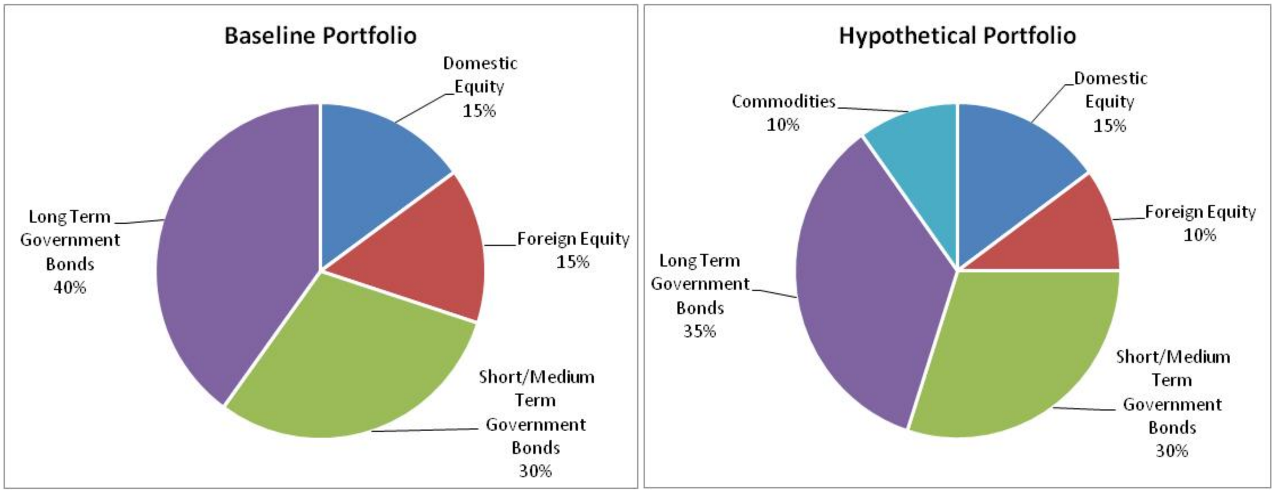
Exhibit 3: Historical Correlations between Commodity Indexes and Equity/Fixed Income Based on Monthly Return

	GSCI Total Return Index (Peso Denominated)	Dow Jones-UBS Total Return Index (Peso Denominated)	AlphaMetrix Commodity-Only CTA Index (Peso Denominated)
IPC	-0.032	-0.058	-0.498
MSCI ACWI (Peso Denominated)	0.428	0.543	-0.154
Dow Jones LATixx Mexico Government BONOS 1-10 Year Index	-0.260	-0.227	-0.405
Dow Jones LATixx Mexico MGB10+ Index	-0.229	-0.212	-0.424

The portfolio composition of Mexican institutional investors may vary based on different goals and investment strategies. However, in order to present the analysis in a more illustrative way, a baseline portfolio for a typical Mexican institutional investor is assumed, based on the data provided by CONSAR as of December 2010. This investor has not invested in commodities and its baseline portfolio consists of 30 percent short/medium term domestic government fixed income securities, 40 percent long term domestic government fixed income securities, 15 percent domestic equity, and 15 percent foreign equity. By shifting 5 percent of its investment in long term domestic government fixed income securities and 5 percent of its investment in foreign equity to commodities, the investor will invest 10 percent of its assets under management in commodities. The change of the portfolio composition from the baseline to the hypothetical portfolio is illustrated in Exhibit 4.

[2] MSCI ACWI Index, GSCI Total Return Index, and Dow Jones-UBS Total Return Index used in this analysis are from January 1994.

Exhibit 4: Portfolio Composition: Baseline vs. Hypothetical Portfolio



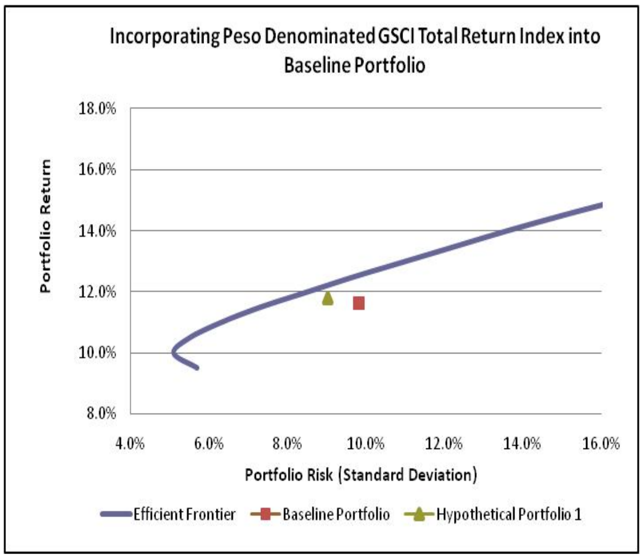
Three hypothetical portfolios are presented in Exhibit 5 based on which commodity index the 10 percent of assets is invested in. Hypothetical Portfolio 1 consists of 30 percent short/medium term government fixed income securities, 35percent long term government fixed income securities, 15percent domestic equity, 10 percent foreign equity, and 10 percent investment in instruments based on the GSCI Total Return Index. Hypothetical Portfolios 2 and 3 have the same portion invested in fixed income securities and equity, with the remaining 10 percent invested in instruments based on the DJUBS Total Return Index and the AlphaMetrix Commodity-Only CTA Index, respectively. All three hypothetical portfolios outperform the baseline portfolio by providing slightly enhanced returns and significantly reduced risks. **More specifically, relative to the baseline portfolio, the three hypothetical portfolios enhance returns by 0.2, 0.5, and 0.4 percentage points, and reduce risks by 0.8, 0.8, and 1.5 percentage points, respectively. All results are statistically significant.**

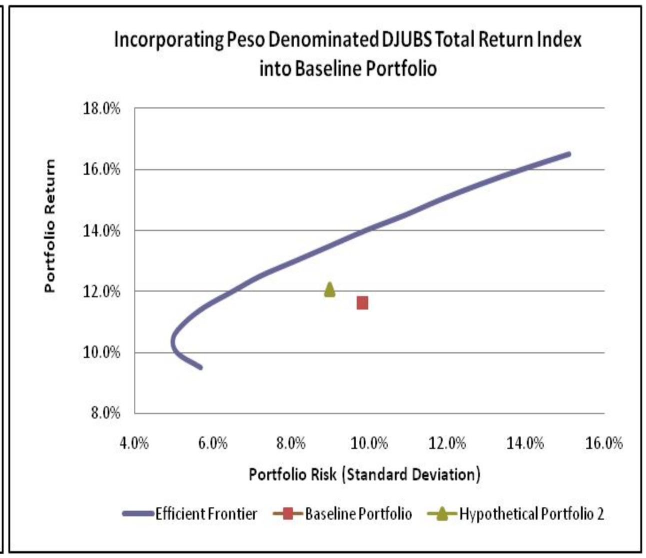
Exhibit 5: Portfolio Composition and Risk/Return Profile: Baseline vs. Hypothetical

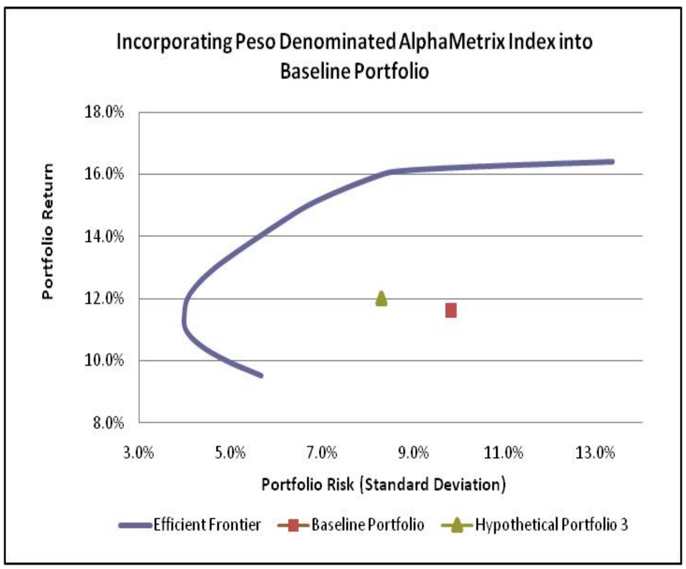
	Baseline Portfolio	Hypothetical Portfolio 1	Hypothetical Portfolio 2	Hypothetical Portfolio 3
IPC	15%	15%	15%	15%
MSCI ACWI	15%	10%	10%	10%
Dow Jones LATixx Mexico Government BONOS 1-10 Year Index	30%	30%	30%	30%
Dow Jones LATixx Mexico MGB10+ Index	40%	35%	35%	35%
GSCI Total Return Index	0%	10%	0%	0%
Dow Jones-UBS Total Return Index	0%	0%	10%	0%
AlphaMetrix Commodity-Only CTA Index	0%	0%	0%	10%
Portfolio Return	11.6%	11.8%	12.1%	12.0%
Portfolio Risk	9.8%	9.0%	9.0%	8.3%

The analysis is easily expanded to the broader concept of the efficient frontier. Exhibit 6 shows that in all three cases, the hypothetical portfolios are closer to their respective efficient frontiers and are to the upper-left of the baseline portfolio. Moving up from the baseline portfolio means enhanced return and moving left from the baseline portfolio means reduced risk. Risk reduction is more noticeable than return enhancement. Among the three hypothetical portfolios, the third one containing exposure to the AlphaMetrix Commodity-Only CTA Index appears to bring the most significant risk reduction likely because it features active management instead of passive investment. Professor Lintner discovered 28 years ago that managed futures contributed to risk reduction and return enhancement to portfolio management. This analysis demonstrates that the conclusion still holds true today, including when we focus on commodity-only managed futures and on countries other than the U.S., such as Mexico.

Exhibit 6: Efficient Frontiers: Baseline Portfolio vs. Hypothetical Portfolios

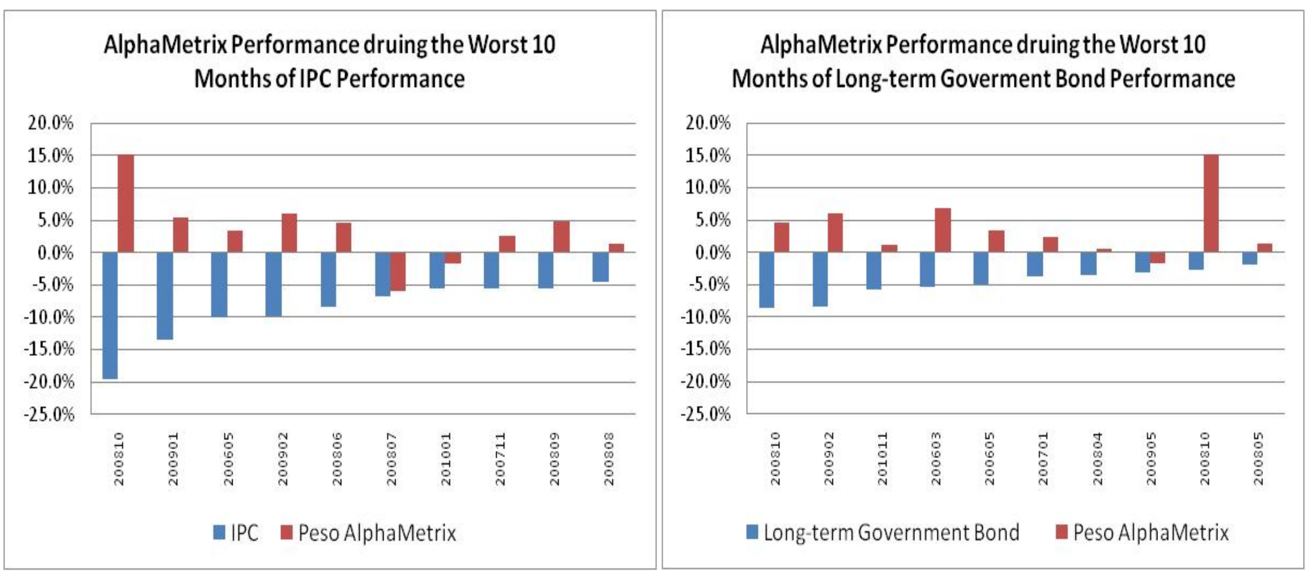






Actively managed funds have the flexibility to take either long or short positions. Thus an actively managed portfolio provides greater flexibility and has the potential to outperform (or underperform) a passive investment portfolio. During market turmoil, commodity markets sometimes may follow equity and bond markets lower, while actively managed funds may take opposite positions on commodities to offset losses incurred in equity and bond markets. Exhibit 7 shows the performance of the Peso denominated AlphaMetrix Index when the IPC Index and the Dow Jones LATixx Mexico MGB10+ Index experienced their worst 10 months of performance, respectively. During 8 out of the 10 worst months for Mexican domestic equity and during 9 out the 10 worst months for Mexican long-term government bonds, the AlphaMetrix Index had positive returns. In other words, active investment in commodities may provide an effective buffer to equity and bonds when that protection is most needed. However, this does not suggest that active investment in commodities is always superior to passive commodity indexes. Active investment requires due diligence to choose the right fund managers, while investable instruments based on passive indexes may provide exposure to benchmarks for a broad range of commodities and are easily accessible. When choosing between these two strategies, investors should take into account all important factors including liquidity, expenses, their investment time horizon, and their own risk appetite.

Exhibit 7: Performance of Peso-Denominated AlphaMetrix Index When Equity and Bond Had Worst Performance



This analysis based on correlation among different asset classes and the theory of the efficient frontier shows that for institutional investors in Mexico such as pension funds, mutual funds, and insurance companies, diversifying a reasonable portion of their assets into commodities could improve the risk/return profile of the portfolio. This simple analysis can be extended and customized to more complex portfolios, which include more asset classes with different portfolio compositions.

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