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Commodities: The Strategic Case

December 2017

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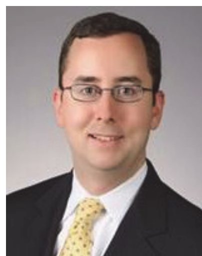

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After four years of underperforming other asset classes from 2012 through 2015 (refer to Exhibit 1), commodities as an asset class finally showed signs of life with strong gains in 2016 as years of overproduction and lower prices resulted in supply cut-backs amid strengthening demand. Similarly, inflation has also been consistently below expectations for most of that time period, which has also been supportive of returns in other financial assets, particularly equities. In 2017, other financial assets have outperformed commodities, as the global economy continues to slowly improve, largely on the strength of accommodative monetary policy from global central banks. While the global expansion has been moderate, there is the potential for growth to accelerate and the implications could be positive for commodity demand. As many central banks continue to fight low inflation, we believe they will continue to maintain loose policy measures until they are confident that inflation can and will move higher – in other words, it may be better to tighten late than early. While valuations across many assets continue to trend upward amid low volatility, investors who desire portfolio diversification and risk management may look more favorably towards an allocation to commodities, especially amid its decline over the past several years. In this paper, we will review the potential benefits of an allocation to commodities.

Exhibit 1: Asset Class Returns Since 2000

Year	Worst Performer						Best Performer
2000	Emerging Markets -30.83%	Internationa Equity 14.17%	US Equity 9.10%	US 3-mo T-bill 6.13%	US Agg Bond 11.63%	REITS 31.04%	Commodities 31.84%
2001	Internationa Equity 21.44%	Commodit es 19.51%	US Equity 11.89%	Emerging Markets -2.61%	US 3-mo T-bill 3.58%	US Agg Bond 8.44%	REITS 12.35%
2002	US Equity 22.10%	International Equity -15.94%	Emerging Markets -6.17%	US 3-mo T-bill 1.65%	REITS 3.58%	US Agg Bond 10.25%	Commodities 25.91%
2003	US 3-mo T-bill 1.03%	US Agg Bond 4.10%	Commodities 23.93%	US Equity 28.68%	REITS 36.18%	Internationa Equity 38.59%	Emerging Markets 55.82%
2004	US 3-mo T-bill 1.41%	US Agg Bond 4.34%	Commodities 9.15%	US Equity 10.88%	Internationa Equity 20.25%	Emerging Markets 25.55%	REITS 33.16%
2005	US Agg Bond 2.43%	US 3-mo T-bill 3.25%	US Equity 4.91%	Internationa Equity 13.54%	REITS 13.82%	Commodities 21.36%	Emerging Markets 34.00%
2006	Commodities 2.07%	US Agg Bond 4.33%	US 3-mo T-bill 4.90%	US Equity 15.79%	Internationa Equity 26.34%	Emerging Markets 32.14%	REITS 35.97%
2007	REITS 17.55%	US 3-mo T-bill 4.60%	US Equity 5.49%	US Agg Bond 6.97%	Internationa Equity 11.17%	Commodities 16.23%	Emerging Markets 39.42%
2008	Emerging Markets -53.33%	Internationa Equity 43.38%	REITS 39.20%	US Equity 37.00%	Commodit es 35.65%	US 3-mo T-bill 1.52%	US Agg Bond 5.24%
2009	US 3-mo T-bill 0.16%	US Agg Bond 5.93%	Commodities 18.91%	US Equity 26.46%	REITS 28.46%	Internationa Equity 31.78%	Emerging Markets 78.51%
2010	US 3-mo T-bill 0.14%	US Agg Bond 6.54%	Internationa Equity 7.75%	US Equity 15.06%	Commodit es 16.83%	Emerging Markets 18.88%	REITS 28.07%
2011	Emerging Markets -18.42%	Commodit es 13.32%	Internationa Equity 12.14%	US 3-mo T-bill 0.06%	US Equity 2.11%	US Agg Bond 7.84%	REITS 9.37%
2012	Commodit es 1.06%	US 3-mo T-bill 0.09%	US Agg Bond 4.22%	US Equity 16.00%	REITS 17.12%	Internationa Equity 17.32%	Emerging Markets 18.22%
2013	Commodit es 9.52%	Emerging Markets -2.60%	US Agg Bond 2.02%	US 3-mo T-bill 0.06%	REITS 1.22%	Internationa Equity 22.78%	US Equity 32.39%
2014	Commodit es 17.01%	Internationa Equity 4.90%	Emerging Markets -2.19%	US 3-mo T-bill 0.03%	US Agg Bond 5.97%	US Equity 13.69%	REITS 32.00%
2015	Commodit es 24.66%	Emerging Markets -14.92%	Internationa Equity 0.81%	US 3-mo T-bill 0.06%	US Agg Bond 0.55%	US Equity 1.38%	REITS 4.48%
2016	US 3-mo T-bill 0.33%	Internationa Equity 1.00%	US Agg Bond 2.65%	REITS 6.68%	Emerging Markets 11.19%	Commodities 11.77%	US Equity 11.96%
YTD 2017	Commodit es 2.87%	US 3-mo T-bill 0.75%	REITS 1.75%	US Agg Bond 3.14%	US Equity 14.24%	Internationa Equity 19.96%	Emerging Markets 27.78%

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Sources: Credit Suisse Asset Management, LLC, Bloomberg LP. Commodities measured by: Bloomberg Commodity Index Total Return. Emerging Markets: MSCI Daily TR Net Emerging Markets Index. International Equity: MSCI Daily TR Net EAFE Index. REITS: Dow Jones US Select REIT Total Return Index. US Equity: S&P 500 TR Index. US 3-mo T-bill: US 3-Month Treasury Bill. US Aggregate Bond: Bloomberg Barclays Capital US Aggregate Bond Index. YTD 2017 returns are up to 9/30/2017. **Past performance is no guarantee or indicator of future results.**

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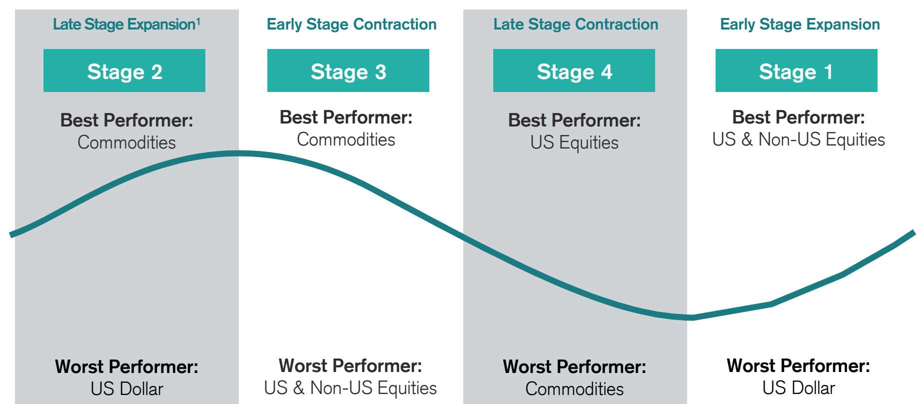
Business Cycle Diversification

Commodities have historically helped to diversify business cycle risk as the asset class tends to behave differently compared to equities during various phases, such as expansions and contractions during the early and late periods of the cycle. In examining the different stages of the US business cycle (see Exhibit 2) from 1969 through 2009 for US Equities, Non-US Equities, the US Dollar and Commodities, the following elements were observed:

- On average, expansionary periods lasted for over five years, whereas contractionary periods lasted for only one year.
- US and non-US equity returns were always positive during early stage expansions and almost always positive in late stage expansions.
- US and non-US equity returns were always negative in early stage contractions.
- US equities were mostly positive in Stage 4 or late stage contractions.
- Commodity returns were positive and typically outperform equities during late stage expansions (Stage 2) and early stage contractions (Stage 3).
- The US Dollar tended to be positively correlated with the relative out-performance of US equity markets over non-US equity markets.

Exhibit 2: Comparing Equity Markets Returns vs. Commodities during US Business Cycles (12/31/1969 – 6/30/2009)



Sources: NBER, Bloomberg LP, Ibbotson, Credit Suisse Asset Management, LLC. NBER official periods for contractions and expansions were split in half to represent the four stages of the business cycle. The first half of each expansion and contraction period represents the early stage expansion (Stage 1) and early stage contraction (Stage 3) phases, respectively. The second half of each expansion and contraction period represents the late stage expansion (Stage 2) and late stage contraction (Stage 4) phases, respectively. **Past performance is no guarantee or indicator of future results.**

[1] As of 9/30/17, the Commodities Portfolio Management Team believes the US Business Cycle is in the Late Stage Expansion.

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Exhibit 3 demonstrates how both commodities and equities have performed during the different business cycles:

Exhibit 3: Analysis of Average Monthly Returns in Each Business Cycle (12/31/1969 – 06/30/2009)[1]

Business Cycle Stage	Commodities (Excess Return)[3]	US Dollar	US Equities (Excess Return)[3]	International Equities (Excess Return)[3]
1 – Early Stage Expansion	0.30%	-0.20%	0.70%	1.05%
2 – Late Stage Expansion[2]	1.04%	0.00%	0.46%	0.37%
3 – Early Stage Contraction	0.71%	0.11%	-2.37%	-2.80%
4 – Late Stage Contraction	-1.71%	0.21%	1.03%	0.09%
1+2	0.67%	-0.10%	0.58%	0.71%

Current Business Cycle Dynamics

Thus far, while the peak in the current US expansion that started in June 2009 has yet to be defined, this recovery has already exceeded the average expansion length of 5.4 years and is fast approaching the longest expansion length of 10 years dating back to 1969. Assuming that the economy is more than halfway through the current expansion, this would also indicate that it is currently in Late Stage Expansion. The course of this US growth phase was established more than eight years ago when the US Federal Reserve (Fed) loosened monetary conditions with a combination of bond purchases and low interest rates. Due to these policies, the US economy has demonstrated steady improvement, and US equity markets have outperformed non-US equity markets by more than 126% through the end of 2016. Additionally, beginning in 2009, other central banks around the world began implementing comparable easing measures as the US. As a result of this, many of these economies have also responded positively as indicated by their respective key economic indicators. More recently in 2017, equity returns in emerging and developed non-US markets have outperformed US equities. This could be another indication that the business cycle has already progressed to the second phase of an expansionary cycle. As this continues to progress through the business cycle, coordinated growth in the global economy may translate into increased consumption of goods and higher commodity demand.

The Great Diversifier

Aside from business cycle diversification, a strategic allocation to commodities has also historically helped to diversify risk when added to a broad based portfolio. The more dissimilar the assets' behavior under a range of different market conditions, the greater the potential for diversification. As illustrated by Exhibit 1, during years when commodities outperformed most other asset classes, such as 2000 and 2002, US equity markets underperformed. In contrast, when US equities outperformed from 2013 through 2015, commodities drastically underperformed.

Correlation to Traditional Asset Classes

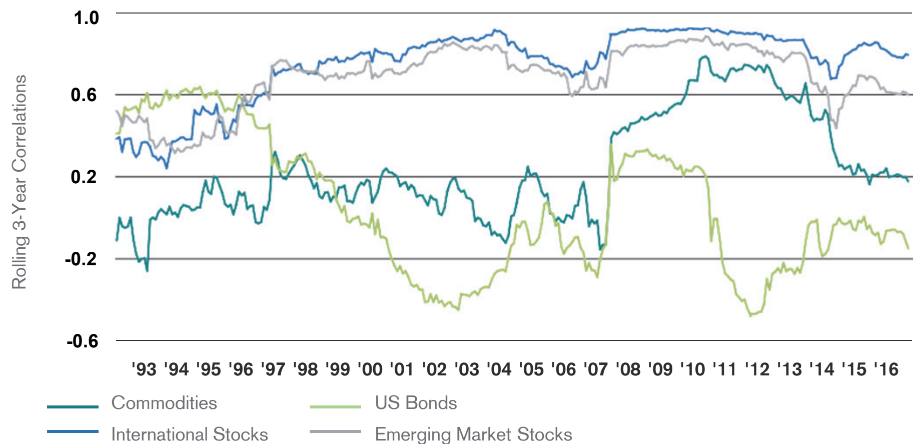
The differentiating behavior seen in Exhibit 4 highlights one of the key attributes that commodities may offer versus other financial assets: low correlation. While stocks and bonds possess values that are tied to expectations of capital appreciation or of changes in future cash flows, the main drivers of commodity futures prices consist of changes in expectations for the global supply of and demand for raw materials. As a result of these differences, the historical risk and return characteristics of commodities have displayed little or no relationship with those of most other financial assets, as demonstrated by Exhibit 4.

[1] Sources: Credit Suisse Asset Management, LLC, NBER, Bloomberg LP, and Ibbotson. Commodities measured by: S&P GSCI Excess Return Index. US Dollar: US Dollar Index. US Equities: S&P 500 Excess Return Index. International Equities: MSCI Daily TR Net EAFE Index. NBER official periods for contractions and expansions were split in half to represent the four stages of the business cycle. The first half of each expansion and contraction period represents the early stage expansion (Stage 1) and early stage contraction (Stage 3) phases, respectively. The second half of each expansion and contraction period represents the late stage expansion (Stage 2) and late stage contraction (Stage 4) phases, respectively. **Past performance is no guarantee or indicator of future results.**

[2] As of 9/30/17, the Commodities Portfolio Management Team believes the US Business Cycle is in the Late Stage Expansion.

[3] The excess return includes the return of the index (including dividends if applicable) minus the risk free rate.

Exhibit 4: Rolling 3 Year Correlation of Monthly Returns of US Stocks against Commodities, US Bonds, International Stocks and Emerging Market Stocks: (01/01/91 – 09/30/17)[1]



With the potential for low correlation benefits, the addition of even a modest basket of commodities to a traditional portfolio has historically helped to reduce overall volatility, especially during periods of extreme market movements. Exhibit 5 shows that, over the 10 worst years for US fixed income markets since January 1977 (adjusted for inflation), commodities have outperformed by 8.69% on average. In addition, Exhibit 6 shows that, over the 10 worst years for US equity markets since January 1970 (adjusted for inflation), commodities have outperformed by 28.18% on average.

Exhibit 5: Comparison of Commodities and Bond Returns During 10 Worst Years for Bond Markets (Less CPI)[2]

	US Agg Bond[3]	S&P GSCI[3]	Year
1	-9.45%	-1.07%	1980
2	-9.39%	22.49%	1979
3	-7.06%	23.15%	1978
4	-5.51%	2.70%	1994
5	-3.75%	-2.95%	2013
6	-3.42%	3.92%	1977
7	-3.29%	-32.55%	1981
8	-2.70%	39.04%	1999
9	-1.55%	-34.96%	2015
10	-1.40%	19.62%	1987
Average	**-4.75%**	**3.94%**	

Exhibit 6: Comparison of Commodities and Equity Returns During 10 Worst Years for Equity Markets (Less CPI)[2]

	S&P 500 TR[4]	S&P GSCI[4]	Year
1	-38.76%	-48.25%	2008
2	-37.82%	28.16%	1974
3	-24.06%	30.10%	2002
4	-19.37%	70.25%	1973
5	-14.67%	-34.72%	2001
6	-14.45%	-32.55%	1981
7	-13.64%	3.92%	1977
8	-11.68%	47.17%	2000
9	-8.42%	23.76%	1990
10	-2.59%	8.50%	1970
Average	**-18.55%**	**9.63%**	

Past performance is no guarantee or indicator of future results.

[1] Sources: Credit Suisse Asset Management, LLC, Bloomberg LP. US Stocks measured by: S&P 500 Index. Commodities: Bloomberg Commodity Index Total Return. US Bonds: Bloomberg Barclays Capital US Aggregate Bond Index. International Stocks: MSCI Daily TR Net EAFE Index. Emerging Market Stocks: MSCI Daily TR Net Emerging Markets Index.

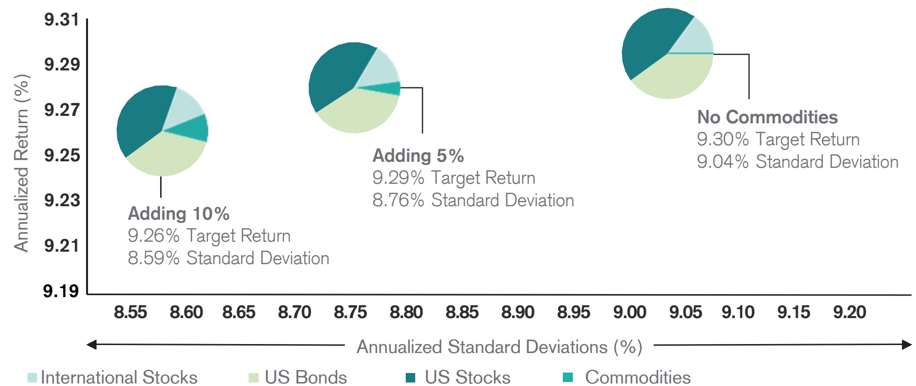
[2] Source: Bloomberg, LP.

[3] Note: Analysis performed for the Bloomberg Barclays Capital US Aggregate Bond Index less CPI vs. the S&P Goldman Sachs Commodity Index less CPI from January 1977 to December 2016. CPI represents Core CPI.

[4] Note: Analysis performed for the S&P 500 Total Return Index less CPI vs. the S&P Goldman Sachs Commodity Index less CPI from January 1970 to December 2016. CPI represents Core CPI.

Within a portfolio context, historical data from 1970 through September 2017 shows that adding even a modest commodities allocation of 5% to a portfolio may reduce risk over the long term.

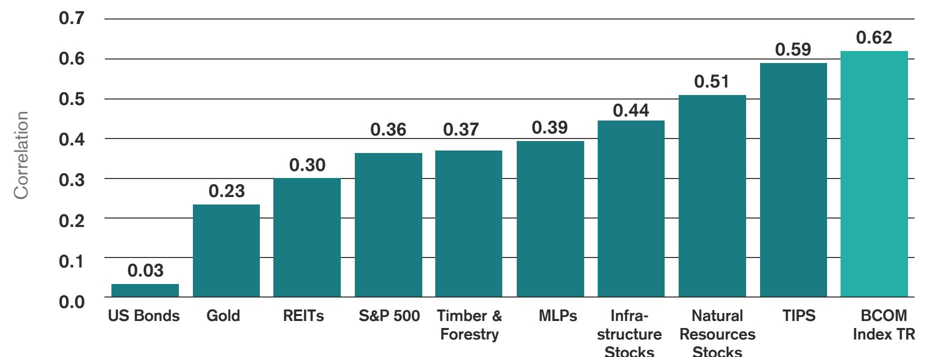
Exhibit 7: Adding Commodities for a More Complete Portfolio (01/01/1970 – 9/30/2017)[1]



Commodities as an Inflation Hedge

While commodities have exhibited low correlation to other financial assets, they tend to be highly correlated with measures of inflation risk. The strong link between commodities and inflation exists because raw materials and their associated costs are key inputs in the basket of goods used in compiling many consumer price indices. Of the various instruments that are categorized as "real assets", commodities tend to exhibit the strongest link as seen in Exhibit 8.

Exhibit 8: Correlation between Inflation and Various Asset Classes (5/31/2006 – 9/30/2017)[2]

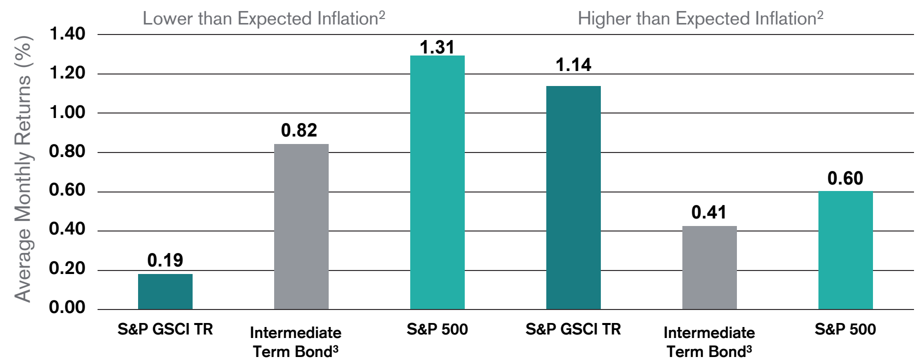


However, one of the most compelling values that commodities offer is its differentiated return characteristics during periods of unexpected inflation risk. Unexpected inflation, or the difference between projected and realized inflation, can dramatically impact financial assets. Exhibit 9 shows that, in periods where inflation has come in higher relative to expectations, commodities have historically outperformed.

[1] Sources: Bloomberg LP, Credit Suisse Asset Management, LLC, Ibbotson. Risk measured by standard deviation, a statistical measurement of dispersion around an average which depicts how widely returns varied over a certain time period. Allocation: Initial allocation: 40% US bonds, 45% US stocks, 15% international stocks. As commodities were added, other asset classes were reduced proportionately. Commodities measured by: S&P Goldman Sachs Commodities Index. US Stocks: S&P 500 TR Index. International Stocks: MSCI Daily TR Net EAFE Index. US Bonds: Represented by the Ibbotson Intermediate-Term Government Bond Index TR from 1/1/1970 to 12/31/2010, and BofA Merrill Lynch US Treasury Current 5 Year Index from 12/31/2010 through the end of the period.

[2] Sources: Bloomberg LP, Credit Suisse Asset Management, LLC. Correlation analysis represents asset class returns that are lagged for a one month period and compared to current period CPI from May 31, 2006 to September 30, 2017. Inflation is represented by Headline Consumer Price Index (CPI). US Bonds measured by: Bloomberg Barclays US Agg TR Value Unhedged USD Index. Gold: SPDR Gold Shares. REITs: FTSE NAREIT All Equity REITS Index. Timber & Forestry: S&P Global Timber & Forestry Index. MLPs: Alerian MLP TR Index. S&P 500: S&P 500 TR Index. Infrastructure Stocks: Dow Jones Brookfield Global Infrastructure Composite Yield TR USD Index. Natural Resources Stocks: S&P Global Natural Resources Net TR Index. TIPS: Barclays 10-Year TIPS Index. BCOM Index TR: Bloomberg Commodity Index Total Return.

Exhibit 9: Average Commodity Performance in Periods of Both Lower and Higher than Expected Inflation Environments (01/01/1970 – 09/30/2017)[1]

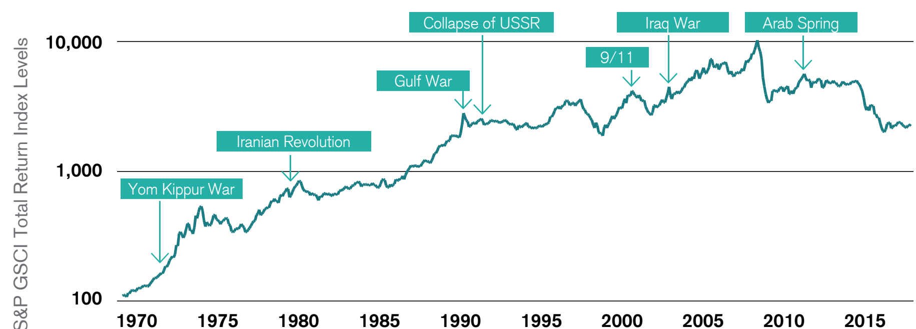


This chart also helps to explain the market environment that persisted from 2011 through 2015. During this time, central banks around the world enacted liquidity measures that would typically counteract lower prices of goods, but stocks and bonds significantly outperformed commodities, because higher inflation did not materialize.

Commodities and Geo-Political Risk

Commodities may also help to reduce risk during periods of geo-political instability. This source of risk may lead to price increases in the Energy, Industrial Metals and/or Agriculture sectors, and to increased demand for Precious Metals as safe haven assets. At the same time, these events may hurt equity markets, in particular. In many emerging economies, where commodities production is a primary driver of economic viability, unstable government regimes may enhance political conflicts and lead to supply disruptions. Exhibit 10 shows how various geo-political events since 1970 have affected commodity returns.

Exhibit 10: Cumulative Monthly Commodity Returns During Conflict and Geo-Political Events (Logarithmic Scale) (1/1/1970 – 09/30/2017)[4]



Conclusion

With the current market climate this may be an opportunity for investors to access the asset class while commodity prices remain at lower levels. Investors may value commodities as a portfolio diversifier as the global economy progresses towards the next stage of the business cycle, geo-political risk is on the rise and monetary policy remains loose-for-longer. Overall, commodities is a long-term strategic asset class, and including indexed commodities in a well-diversified portfolio has historically reduced risk in a cost effective, transparent and liquid manner.

[1] Sources: Ibbotson, Bloomberg LP, Credit Suisse Asset Management, LLC. **Past performance is no guarantee or indicator of future results.**
[2] Inflation is represented by the Headline Consumer Price Index (CPI). Unexpected inflation is based on the historical relationship between one month Treasury bills and CPI. Commodity returns are lagged one month compared to unexpected inflation figures.
[3] Represents the Ibbotson Intermediate-Term Government Bond Index TR from 1/1/1970 to 12/31/2010, and the BofA Merrill Lynch US Treasury Current 5 Year Index from 12/31/2010 through the end of the period.
[4] Sources: Credit Suisse Asset Management, LLC, Bloomberg LP. **Past performance is no guarantee or indicator of future results.**

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