

Commodities – a strategic investment in uncertain times

Diversifying portfolios and finding suitable investment alternatives isn't easy, but **RICHARD KEARY** and **DAVID STANBRIDGE** suggest unleveraged commodity investments may lower overall portfolio volatility and improve returns.

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The 1990s was perhaps the best decade in history for investors in the US and other stock markets. The first years of the new millennium have proved more difficult, with recent experience dispelling the myth that stock prices can only rise.

How will investors react to this reversal of fortune? We are seeing an increasing interest in alternative investments like private equity and hedge funds. We are also seeing an attendant increase in vendors and products. These investments are certainly good diversifiers but are generally not the only 'alternatives' and are not benchmark friendly.

There is another asset class that is well researched in the literature that has clear investment benefits and that is an unleveraged commodity investment. Sophisticated investors are adopting the view that an exposure to commodity markets is a prudent investment that may lower overall portfolio volatility and improve portfolio return.

During this period of economic uncertainty, a product that exhibits positive returns over time, low to negative correlation with stocks and bonds, and excellent market liquidity, should be desirable to both institutional and retail investors.

The unleveraged commodity portfolio

It is critical that investors appreciate that an unleveraged commodity investment is not the same as a commodity-trading program. An unleveraged commodity portfolio represents the returns that would be earned by holding only passive long positions in commodity futures contracts. To be unleveraged the futures positions must be fully collateralised by cash. For example, buying futures contracts with a face value of \$10,000 would require \$10,000 in cash to be posted as collateral. This cash provides the current return while the futures contract would provide the unleveraged exposure to the future price of the commodity.

The benefits of investment – empirical evidence

The benefits of commodity investments are well supported in the literature. Jensen and Johnson (2001) researched the performance of a broad range of alternative investment classes, including several real estate and commodity indexes, during restrictive monetary conditions. The results indicate that commodity futures provide attractive return patterns while real estate offers little diversification benefits for investors with traditional stock and bond portfolios. Abanomey

TABLE 1: RETURN AND VOLATILITY STATISTICS - ASSET CLASSES AND MANAGED OUTCOMES

	3 years		5 years		10 years	
	Return % pa	Risk % pa	Return % pa	Risk % pa	Return % pa	Risk % pa
AEQ - Ind	1.79%	11.76%	6.60%	11.61%	12.03%	12.89%
AEQ - Res	7.45%	18.28%	11.41%	21.91%	11.21%	20.79%
IEQ	-12.60%	14.05%	0.70%	14.62%	8.39%	13.47%
LPT	15.18%	6.76%	11.62%	10.04%	12.86%	10.24%
Dir Prop	9.45%	1.26%	9.11%	1.18%	8.26%	2.09%
AFI	8.75%	3.29%	6.83%	3.72%	8.68%	4.47%
IFI	9.56%	2.64%	7.93%	2.80%	9.16%	3.13%
Cash	5.43%	0.22%	5.29%	0.19%	5.84%	0.32%
CRB	3.87%	9.13%	-1.89%	9.62%	3.07%	8.35%
GSCI	10.42%	21.52%	4.04%	22.00%	4.53%	18.05%
Bal Fund	2.76%	6.21%	6.73%	7.03%	10.72%	8.12%

Source: BT Financial Group. See Notes for definitions.

return and correlation characteristics and the resultant benefit to their portfolio. The following analysis shows the risk, return and correlation characteristics of a range of traditional benchmarks and two of the oldest commodity benchmarks. Table 1 shows key risk and return statistics for a range of traditional benchmark indices, two long-standing commodity indices and a 'typical' Australian balanced portfolio of traditional assets. Definitions and calculation methods are provided in the Notes at the end of this paper.

Investors might observe initially that the risk and return numbers do not look very exciting. Returns to the Goldman Sachs Commodity Index (GSCI), for

TABLE 2: CORRELATION MATRIX – 5 YEARS

5 Years	AEQ – Ind	AEQ – Res	IEQ	LPT	DP	AFI	IFI	CRB	GSCI
AEQ – Ind	1	0.42	0.50	0.39	0.11	0.02	-0.21	0.09	0.07
AEQ – Res		1	0.13	0.18	0.18	0.02	-0.18	0.36	0.33
IEQ			1	0.04	-0.15	-0.25	-0.45	-0.05	-0.13
LPT				1	0.02	0.48	0.18	0.14	0.10
DP					1	0.13	0.12	0.05	0.07
AFI						1	0.68	0.16	0.24
IFI							1	-0.02	0.05
CRB								1	0.76
GSCI									1

TABLE 3: CORRELATION MATRIX - 10 YEARS

10 Years	AEQ – Ind	AEQ – Res	IEQ	LPT	DP	AFI	IFI	CRB	GSCI
AEQ – Ind	1	0.51	0.57	0.55	-0.01	0.37	0.20	0.12	0.06
AEQ – Res		1	0.20	0.30	0.06	0.14	-0.06	0.37	0.24
IEQ			1	0.26	-0.05	0.09	-0.01	-0.03	-0.08
LPT				1	-0.01	0.49	0.34	0.16	0.03
DP					1	-0.07	-0.17	0.05	0.09
AFI						1	0.72	0.12	0.16
IFI							1	-0.05	0.06
CRB								1	0.68
GSCI									1

Source: BT Financial Group. See Notes for definitions.

and Mathur (1999) modelled the potential gains in the risk/return tradeoffs by including commodities futures into a portfolio of international stocks and bonds.

Hogan and Baierl (1999) found that hard assets offer an attractive option for portfolio diversification. They provide the potential to improve returns and

reduce risk. An allocation to commodities should help risk-averse investors to further diversify portfolios without impacting on expected return. Greer (2000) found that data from 1970 supports the risk and return benefits of commodity investing.

Investors should consider a new investment class based on its risk,

example, are positive over time, relatively modest but come with very high volatility. Commodity Research Bureau Index (CRB) returns are less volatile and less than cash over all time periods. However, in the three years to the end of December 2002 when traditional asset classes have stumbled, commodities have provided some relief.

The other metric critical to portfolio construction issues is correlation. The correlation characteristics of commodities are a major part of their attraction as an addition to a portfolio of traditional assets.

The correlation statistics are interesting. The CRB and GSCI have very low or negative correlation to traditional assets. What is more instructive is that the low correlation commodities have to assets that would normally be thought of as an inflation hedge, such as resource shares and direct property. This is not to say that these investments should not be included. It does say that the inflation hedge in a portfolio could be more

‘The correlation characteristics of commodities are a major part of their attraction as an addition to a portfolio of traditional assets.’

diversified and certainly more liquid than direct property. These correlation observations hold over five years and 10 years to the end of December 2002 (See Tables 2 and 3).

The correlation statistics suggest that commodities have potential diversification benefits. However, it is important to point out that over the past 20 years, inflation and nominal interest rates have been falling. Investors have not had any incentive to

look for hedges against rising inflation.

With interest rates at secular lows, investors should be concerned about the potential impact of inflation on financial assets over the next 10 years because inflation and traditional asset indices are inversely correlated. This is because the pricing mechanism for financial assets discounts future cash flow at some discount rate. If this discount rises (rising inflation leads to higher nominal discount rates) the present value of financial assets will be eroded.

The price of commodities is related to near-term supply and demand pressures so it is not uncommon to see consumers buy and store commodities when facing the prospect of higher future prices. One would expect to see a positive relationship between commodities and the path of interest rates (and thus inflation).

Impact on a balanced portfolio of traditional investments

Table 4 shows the benefit of a 10% passive allocation to a broadly based commodity benchmark replacing Australian shares (6%) and Australian bonds (4%). This commodity investment is an equal allocation between the CRB and GSCI Total Return Indices.

Over all time periods the volatility of the benchmark portfolio is reduced when commodities are added. When returns have been poor (3 years to end December 2002), the addition of a commodity investment actually improved return. Over longer time periods in this sample period, the volatility reduction has come at the cost of some return.

Hostile markets

It is useful to turn the empirical evidence into a more tangible demonstration of the benefits of commodity investment. Goldman Sachs (2001) coined a term – ‘hostile’ markets. A hostile market may be one where a typical fund allocated 60/40 between stocks and bonds performs poorly.

Goldman Sachs research identified that the average return in hostile markets in the 30 years from December 1970 was negative 7.5%. The Goldman

TABLE 4: HISTORICAL IMPACT OF A 10% ALLOCATION TO COMMODITIES

	Balanced Fund Ex Commodities	Balanced Fund Plus Commodities
3 Year		
Return % pa	1.27%	1.57%
Risk % pa	6.64%	6.29%
5 Year	Balanced Fund	Plus Commodities
Return % pa	6.14%	5.63%
Risk % pa	7.32%	6.97%
10 Year	Balanced Fund	Plus Commodities
Return % pa	10.42%	9.81%
Risk % pa	8.24%	7.65%

Source: BT Financial Group

TABLE 5: IMPACT OF OWNING COMMODITIES WHEN TRADITIONAL ASSETS PERFORM POORLY

12-months Ending	Balanced Fund Ex Commodities	Balanced Fund + Commodities	Value Added/Detracted
Jan-95	-12.49%	-11.08%	1.41%
Dec-94	-8.46%	-6.82%	1.64%
Dec-02	-5.87%	-3.43%	2.44%
Nov-94	-5.19%	-4.13%	1.06%
Feb-95	-4.85%	-4.01%	0.84%
Oct-94	-4.63%	-3.56%	1.07%
Jul-02	-4.14%	-4.55%	-0.41%
Nov-02	-3.55%	-1.83%	1.72%
Oct-02	-3.51%	-2.01%	1.51%
Jun-02	-3.42%	-3.82%	-0.40%
Sep-02	-2.50%	-1.44%	1.06%
Aug-02	-2.35%	-2.28%	0.08%
Sep-94	-2.19%	-1.83%	0.36%
Sep-01	-1.47%	-3.30%	-1.83%

Source: BT Financial Group. Trailing 12-month return before fees and taxes.

Sachs Commodity Index (GSCI) average return in these hostile markets was +32.9%. It is this benefit – good performance when traditional assets doing poorly – that underpins the long-term benefit of commodities as a strategic investment. We have looked at poor market returns from an Australian context using a broader commodity index than the GSCI. Our data set is shorter but we see the same effect of an allocation to commodities.

For the period January 1992 through December 2002, when rolling one year returns were negative for a typical balanced fund benchmark portfolio, the same portfolio with a 10% allocation to commodities mitigated losses almost all the time. As Table 5 shows, even a 10% allocation to commodities has a material impact when other asset classes are performing poorly.

The potential to add value from active management

Commodity investing is particularly conducive to active management. Passive commodity benchmarks are gross indices based on averaging a series of futures contract forward prices and then averaging further across the commodities included in the benchmark.

The weighting allocated to each commodity can be based on a balanced geometric average, world production levels, futures contract open interest or futures contract liquidity. Commodity prices vary primarily as a result of supply and demand, and as such, do not have the growth characteristics associated with equities. This means that over time, passive indices do not tend to appreciate in the same way as

equities. As a result, opportunities for active management exist.

CONCLUSION

In recent times there has been a growth in investible commodity-linked investment products. There is a large body of evidence that suggests direct commodity investment may provide significant portfolio diversification benefits. Further, these benefits are greater than the traditional approach of investing in commodity-based stock and bond investments.

Commodities provide a unique exposure to market forces such as inflation. Commodity exposure should be a central part of any institutional portfolio. The investment is intuitively appealing, particularly with interest rates at secular lows.

Moreover, investors have access to a liquid investment to diversify their portfolios, a clear advantage in these uncertain times. The search does not stop here. Once investors are comfortable with the idea of commodity exposure the investment can be made even more attractive by active management.

REFERENCES

Abanomey, Walid S.; Mathur, I. (1999), 'The Hedging Benefits of Commodity Futures in International Portfolio Diversification' Winter 1999, Volume 2, Number 3, Pages 51 – 62

Jensen, Gerald R.; Johnson, Robert R. (2001), 'The Diversification Benefits of Commodities and Real Estate in Alternative Monetary Conditions' Spring 2001, Volume 3, Number 4, Pages 53 - 61

Goldman Sachs Global Commodity Research, *Managing Risk in Hostile Markets* May 31, 2001

Greer, Robert. (2000), 'The Nature of Commodity Index Returns', Journal of Alternative Investments, Summer 2000

Hogan, T.; Baierl, G. (1999), 'Investing in Global hard Assets: Diversification Tool for Portfolios', Ibbotson Associates, April 1999

NOTES

A typical balanced fund benchmark comprises 40% Australian shares, 20% international shares, 12% listed property, 26% Australian bonds and 2% cash. A 10% allocation to commodities is funded 6% from Australian shares and 4% from Australian bonds. Commodity exposure is an equal blend of CRB and GSCI TRIs re-weighted monthly. Correlation and risk calculations are based on monthly data and returns are compound annualised returns unless otherwise stated. J

	Asset class	Representative benchmark
AEQ – Ind	Industrial shares (Aust)	S&P/ASX 300 Ind Accum Index
AEQ – Res	Resource shares (Aust)	S&P/ASX 300 Res Accum Index
IEQ	International shares	MSCI World ex Australia Net Dividends Reinvested in AUD
LPT	Listed property trusts (Aust)	S&P/ASX 300 Property Trusts Accum Index
Dir Prop	Direct property (Aust)	AMP Before Tax
AFI	Australian bonds	UBSWA Australian Composite 0+ yrs
IFI	International bonds	SSBWGB (hedged) in AUD
Cash	Cash	UBSWA Australian Bank Bill
CRB	CRB TR Index	CRB Total Return Index
GSCI	GSCI TR Index	GSCI Total Return Index
Bal Fund	Typical balanced fund b/mark	See below for asset allocation

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