Guinness Global Energy Fund

April 2017

GUINNESS ASSET MANAGEMENT LTD

Energy equities as a good inflation hedge

There is increasing concern by some investors over the threat of inflation. 'Real assets' like property and commodities (particularly gold and crude oil) have historically delivered real long term returns that have hedged against inflation. Moreover, energy equities have delivered substantially higher investment returns than those delivered by crude oil or crude oil futures. We propose energy equities as an advantaged, attractively priced asset class that could offer very useful inflation hedging characteristics.

Commodities have often caused inflation and thereby been good hedges

Over the very long term, the return of owning commodity futures is positively correlated with inflation. Several academic studies (including *"Facts and Fantasies about Commodity Futures Ten Years Later" by Bhardwaj, Gorton and Rouwenhorst*) have confirmed this, showing that commodity futures have provided a greater, positive correlation (and therefore an investment hedge) to inflation than either broad market equities or bonds. The latter have not surprisingly been negatively correlated with inflation.

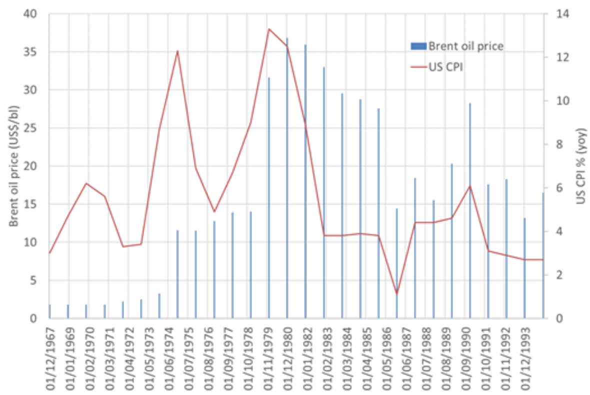
Correlations of assets with inflation (July 1959 – December 2014)

Investment Period	Stocks	Bonds	Commodity Futures
Monthly	-0.08	-0.18	0.09
Quarterly	-0.08	-0.23	0.24
One-year	-0.13	-0.29	0.33
Five-year	-0.10	-0.20	0.47

Source: Swedroe: Commodities Can Hedge Inflation (August 12, 2015) Geetesh Bhardwaj, Gary Gorton and Geert Rouwenhorst

To understand why the returns of commodity futures have been linked with inflation, we must first understand that commodities have often been the cause of the inflation in the first place.

Oil price was a key component of inflation in the 1970s and 1980s



Source: Bloomberg

Crude oil was a key cause of inflation in the most recent period of high inflation; the late 1970s/early 1980s. Several geo-political events (eg the Yom Kippur War in the early 1970s; the Iranian revolution in 1978) led to oil prices rising from less than $2/bl in the late 1960s to over $35/bl (in money of the day terms) in the early 1980s. Over the same period, the US Consumer Price Index (CPI) rose as gasoline prices rose dramatically and higher gasoline prices were a significant driver of inflation metrics at the time. Any investment in crude oil-related companies or crude oil futures would have been a very useful hedge against inflation during this period.

Gold, property and crude oil have been good inflation hedges historically

The prices of gold, crude oil and UK property have risen very similarly since 1960. From 1960 to end 2013 (prior to the oil price collapse at the end of 2014), and measured in US dollars, the gold price rose by 6.8%pa, UK property rose by 7.1%pa and the price of crude oil rose by 7.8%pa. Since then, the crude oil price has fallen (caused by oversupply catalysed by $100+ oil) and those same metrics are an average crude oil return 1960 to end 2016 of 6.1%pa, UK house prices of 6.6%pa and gold of 6.3%pa. As US CPI was 3.8%pa over the same period each asset class has delivered substantial real returns vs inflation. Although over short time periods correlations are relatively weak, over the long term they are significant.

Price return of UK property, gold and crude oil

Source: Halifax, Bloomberg (Dec 1987-2016)

Return, CPI correlation and volatility metrics

1960 - 2016	Gold	UK Property	Crude oil
Annual nominal return (%pa)	6.3%	6.6%	6.1%
Annual real return (%pa)	2.6%	2.9%	2.3%
R-sq with annual changes in US CPI	24.5%	2.6%	21.9%
Standard deviation of monthly returns	5.2%	2.6%	12.6%
Increase in nominal asset value	32.7x	38.4x	28.7x
R-sq of nominal asset value with US CPI	66.9%	83.9%	58.0%

Source: Bloomberg

Whilst we recognise the unpredictability of future inflation, we believe that the case that we are nearing the end of the great "deflation era" 1980 – 2016 is growing. Interest rates look to have bottomed; quantitative easing has expanded the monetary base and the commodity cycle looks to have bottomed. With this backdrop it seems very fair to argue the case for investing in a basket of 'real return' instruments that would provide a hedge against various sources of inflation.

We suggest that, given their historical returns, a selection of 'real assets' such as gold, commodities and property would be a good starting point for creating such a basket.

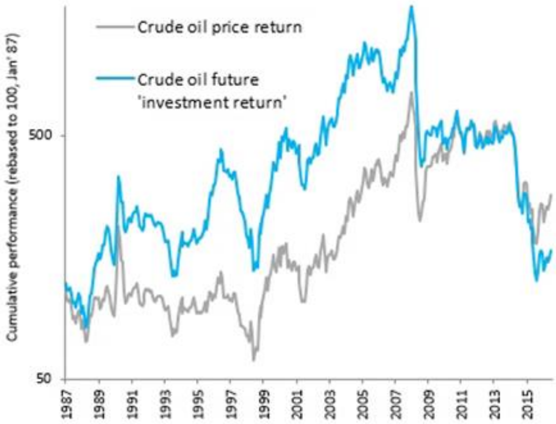
Difficult to get crude oil exposure without suffering the 'roll yield'

Obtaining investment exposure to property or gold prices is relatively straightforward (via direct ownership of the asset) but is much more difficult to obtain direct exposure to crude oil. The obvious direct way to get exposure is via owning crude oil futures contracts but the investment return on these contracts in recent years has been negatively impacted by the 'roll yield'. The 'roll yield' reflects the cost of storing and insuring the underlying crude oil and also the cost (or benefit) from contango (or backwardation) depending upon the structure of the forward curve at any point in time. The net effect is that the return of owning crude oil futures (the 'investment return') is often very different to the 'price return' of owning crude oil which is shown above at 6.1%pa since 1960. Between 1987 and end 2016, the returns have been directionally consistent (5.3%pa for crude oil and 1.7%pa for crude oil futures) but since 2000, crude oil futures have delivered -5.8%pa while the price of oil has increased by 6.1%pa (all in nominal terms).

So, an investment in crude oil futures (to hedge against inflation) would have delivered low nominal and negative real returns.

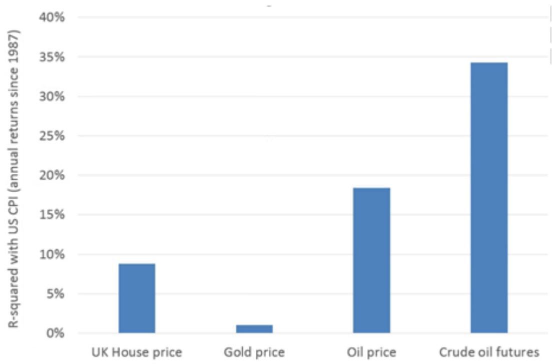
The correlation of crude oil future annual returns with annual changes in US CPI was 34% r-squared. This one year correlation is higher than that witnessed between US CPI and the oil price itself, and that of property or gold. But that in our view does not outweigh the disappointing effect of roll costs on the long run historic real return. And anyway the main correlation arguments for these asset classes as inflation hedges is over the longer rather than the shorter term and here the oil futures correlation is by far the worst.

Return of crude oil futures and crude oil price



Source: Bloomberg

Correlation between US CPI and 'real assets'



Source: Bloomberg (Dec 1987-2016)

Energy equities offered a better correlation and return to inflation metrics

We extended our analysis of US CPI correlations with 'real assets' to assess whether owning a basket of energy equities provided either better correlations, better investment returns (or a combination of both) than owning crude oil futures themselves.

We focussed on two periods (1987-2016 and 2000-2016) and found that our basket of energy equities (represented by an equally weighted basket of Exxon, Chevron, Hess, Occidental, Murphy, Conoco, Marathon and BP until 1995 and by the MSCI World Energy Index after that time) delivered substantially higher returns for investors since 1987 than those delivered from owning a crude oil future (and also substantially higher than the price return witnessed from crude oil itself). In addition, our basket of energy equities also appears to have delivered better long term and similar short term (annual) correlations with US CPI than those from either crude oil or crude oil futures.

Price return of UK property, gold and crude oil

1987-2016	Crude oil	Crude oil futures	Energy equities
Annual nominal return (%pa)	3.9%	1.7%	9.7%
Annual real return (%pa)	1.3%	-0.9%	7.2%
R-sq with annual changes in US CPI	18.4%	34.3%	23.5%
Standard deviation of annual returns	42.5%	43.1%	16.8%
Increase in nominal asset value	3.9x	1.6x	14.8x
R-sq or nominal asset value with US CPI	60.0%	17.1%	91.1%

Return, CPI correlation and volatility metrics

2000-2016	Crude oil	Crude oil futures	Energy equities
Annual nominal return (%pa)	5.8%	-5.8%	6.7%
Annual real return (%pa)	3.7%	-7.8%	4.6%
R-sq with annual changes in US CPI	62.4%	59.5%	58.4%
Standard deviation of annual returns	39.5%	33.3%	20.4%
Increase in nominal asset value	2.4x	0.4x	2.8x
R-sq or nominal asset value with US CPI	33.0%	18.9%	77.7%

** Energy equities is represented by an equal weighted basket of Exxon, Chevron, Hess, Occidental, Murphy, Conoco, Marathon and BP until 1995 and by the MSCI World Energy Index after that time*

The following key points for the period 1987-2016 can be noted:

- Energy equities delivered substantially higher annual returns (+9.7%pa) than either the crude oil price or crude oil futures (3.9%pa and 1.7%pa respectively)
- The r-squared correlation of these annual returns vs US CPI was relatively low for all three assets with energy equities in the middle of the range at 24%

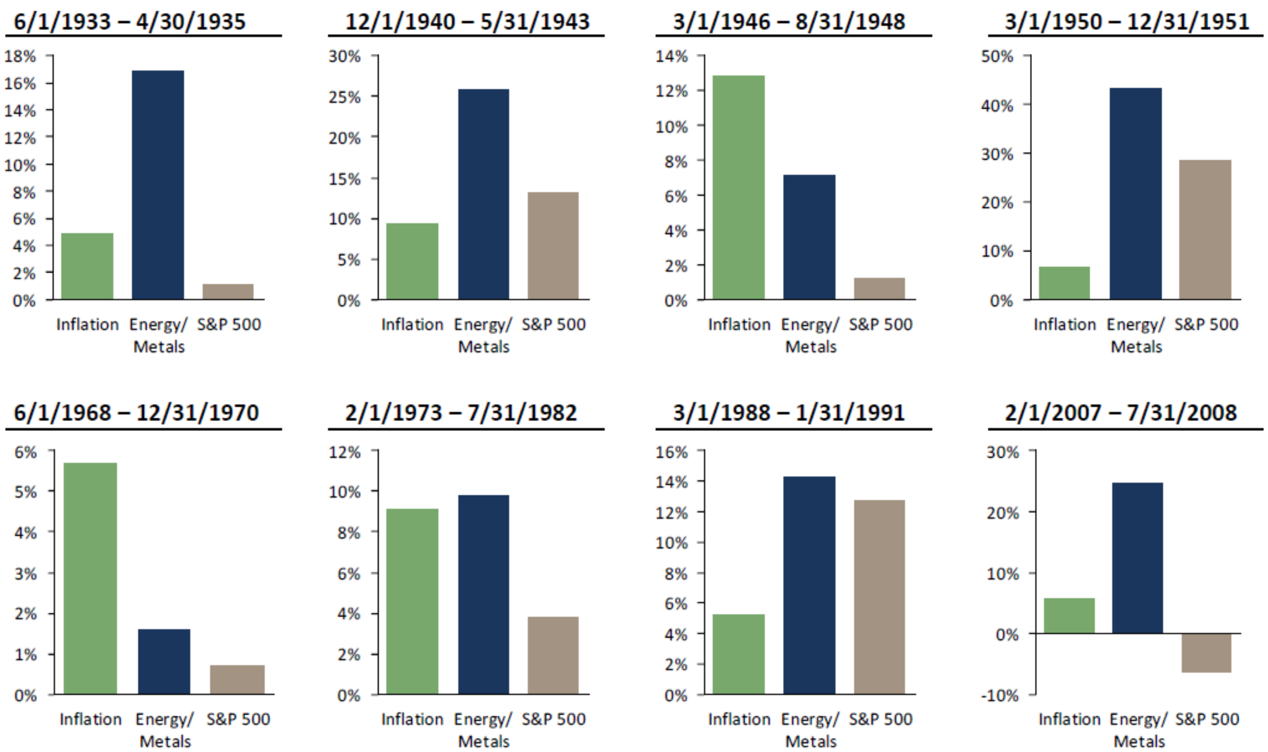
- Energy equities delivered these returns with a lower volatility (standard deviation of monthly returns was 18% versus over 40% for crude oil and crude oil futures)
- The total return generated from owning energy equities was substantially higher than those calculated from owning crude oil or crude oil futures, with energy equities up nearly 15x over the period versus crude oil at 4x and crude oil futures at 1.6x
- Energy equities increased in nominal terms by 14.8x over the period and the long term correlation of this versus US CPI (at 91%) was substantially higher than it was for crude oil (at 17% r-squared)

We found a similar outcome for the 2000-2016 period, with energy equities delivering consistently higher correlations with US CPI (both on annual returns and compounded asset values) together with greater absolute levels of returns and lower volatility in monthly returns. While not published here, our analysis considered a number of time periods and we found that our basket of energy equities delivered better investment returns and generally stronger correlations to US CPI than either crude oil or crude oil futures over all the periods.

Resource equities appear to have similar inflation hedging characteristics back to the 1920s

We are aware that analysing a 30-year period could be considered on the short side. Unfortunately commodity futures data only exists back to 1987. However, we take comfort from some work carried out by GMO (September 2016) analysing the performance of energy and metals equities in periods of inflation since the mid 1920s. According to GMO, a basket of energy and metals equities kept up with or beat inflation in six out of eight occasions when US CPI was more than 5% for a period of one year or more. In fact, the commodity producers delivered real returns of more than 6% per year on average during these inflationary periods, as compared to a destruction of purchasing power of around 1.6% per year for the S&P 500.

During inflationary periods, resource equities have protected purchasing power



Source: GMO, An Investment Only a Mother Could Love: The Case for Natural Resource Equities (Sept 2016)

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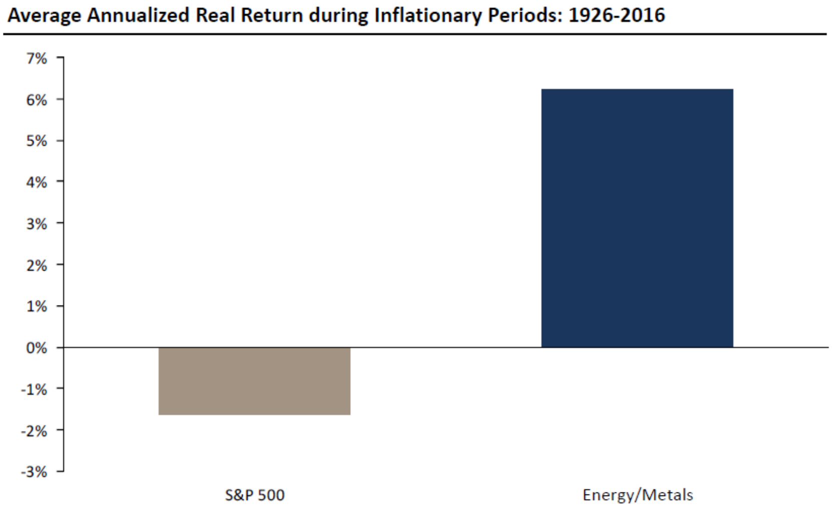

Source: GMO, An Investment Only a Mother Could Love: The Case for Natural Resource Equities (Sept 2016)

Conclusion

We conclude that energy equities have historically offered a good route for delivering oil price-related, inflation hedging investment returns with lower level of volatility. We believe that they should certainly be considered as part of a basket of 'real return' assets to hedge against future inflation. On our analysis, the energy sector is trading at close to multi decade lows in terms of price/book valuation versus the S&P500. We see this low valuation level as providing an opportunity to gain exposure to an asset class that should perform well in future inflationary periods.

Why the Guinness Global Energy Fund?

Best in class energy strategy since inception (18 years): annualised returns of 10.2% p.a. (to 31/03/2017 in USD)*

Towers Watson on luck and skill: *"To be statistically significant, a performance record should be intact for nearly 15 years."*

LIPPER FUND AWARDS 2014 UNITED KINGDOM — Best Fund over 3 years, Equity Sector Natural Resources

INVESTMENT EUROPE FUND MANAGER OF THE YEAR AWARDS 2013-14 — Best Commodity Fund

The Guinness Global Energy strategy started in November 1998 and has been consistently run and managed by Tim Guinness and the wider team ever since. The portfolio is constructed on a "best ideas" basis in a concentrated manner comprising 30 equally weighted positions of 3.3% each. Our equal weighted approach is a 'Guinness House style' and it provides us with a structural sell discipline, a regular 'top slicing' premium and it keeps life simple so that we can focus our efforts on picking the best energy stocks. Our investment process is based on regular, detailed and disciplined macro analysis (to achieve the best possible understanding of the drivers of energy markets) and intelligent regular screening of all energy equities.

We initially screen for good quality companies that display attractive valuation with positive earnings momentum and then perform detailed due diligence on this group to select our preferred portfolio holdings. Our bias is towards value with cash returns as a preferred valuation methodology. We believe that our approach has been a key factor behind the long term outperformance of the Guinness energy strategy versus the MSCI World Energy Index and our strong performance relative to our peer group of competitor energy funds. We think our competitive edge lies in the following attributes:

Consistency of investment philosophy & process	Strategy developed in 1998, applied by the team for 18 years
Equally-weighted portfolio	Limits risk, gives concentration and keeps life simple
Top-down analysis	Shaping the portfolio towards different energy sectors
Value bias	Picking good quality stocks when valuation is attractive and allowing each idea to work
Team	Three managers with varied backgrounds and skills
Length of track record	According to Towers Watson, "To be statistically significant, a performance record should be intact for nearly 15 years."

Guinness Global Energy portfolio

Single sector	Companies producing or distributing energy
High conviction	Equally-weighted, concentrated portfolio (30 positions)
Low turnover	Buy and hold rather than trading philosophy
Unconstrained	No reference to index
Global	Diversified globally
Investment type	Listed equities (long-only)

**The value of an investment and the income from it can fall as well as rise as a result of market and currency movement; you may not get back the amount originally invested. Past performance is not a guide to future performance.*

Note: Simulated (composite) past performance prior to 31 March 2008, the launch date of this Fund. The Guinness Global Energy investment team has been running global energy funds in accordance with the same methodology continuously since 1998. These returns are calculated using a composite of the Investec GSF Global Energy Fund class A from 31 December 1998 to 29 February 2008 (managed by the Guinness team until this date); the Guinness Atkinson Global Energy Fund (sister US mutual fund) from 1 March 2008 to 31 March 2008 (launch date of this Fund), the Guinness Global Energy Fund class A (1% AMC) from launch to 02.09.08, and the Fund's E class (0.75% AMC) thereafter. *Source: Financial Express, bid to bid basis, total return.*

Guinness Asset Management

Guinness Asset Management provides a range of long-only actively managed funds to individual and institutional investors. Founded in 2003, Guinness is independent and is wholly owned by its employees. We have a variety of specialisms in global sector funds, Asian regional and country funds and global growth and global dividend funds. The Guinness equity funds are in a Dublin OEIC and sit alongside a range of similar SEC-registered funds offered to US investors by our US sister company, Guinness Atkinson Asset Management Inc. Having raised around $1bn in these vehicles, primarily from Family Offices, Private Banks and Wealth Managers, Guinness is now pursuing a new era of growth by presenting its capabilities to Pension Funds and other Institutional Investors.

We believe in: in-house research; intelligent screening for prioritisation of research; well-designed investment processes; concentrated, high conviction portfolios; low turnover; and the avoidance of benchmark constraints. Our in-house global economic and industry research allows us to take an independent view and not be led by the market. Our size and specialist nature also means we have the ability to act quickly and efficiently to any market movements. At heart Guinness Asset Management is a value, or growth at reasonable value, investor. We combine strategic sector-selection with a fundamental screening process to identify specific value-driven stock opportunities.

Please find further details at www.guinnessfunds.com

Guinness Global Energy team

Tim Guinness

Tim founded Guinness Asset Management in 2003 when he left Investec, who then appointed his new company as the outsource manager of the Investec Global Energy Fund. Tim has over 35 years' investment experience. He founded Guinness Flight Global Asset Management Ltd in 1987 and was joint CEO from 1987 to 1999 and a portfolio manager of the Global Equity Fund. After Investec acquired Guinness Flight in 1998, he was Chairman of the company during the transition into Investec, as well as lead manager of the Investec Global Energy Fund. Tim read engineering at Cambridge University and, upon graduation in 1968, completed a Master's Degree in Management Science at the Sloan School M.I.T. in the US.

Will Riley, CA

Will joined Guinness Asset Management in May 2007. Previously Will worked for six years for PricewaterhouseCoopers, first in the London Middle Market Assurance Team, then as a valuation specialist in the Valuation & Strategy division. Will qualified as a Chartered Accountant in 2003 and graduated from the University of Cambridge with a Master's Degree in Geography.

Jonathan Waghorn

Jonathan Waghorn has 21' years' experience in the energy sector. He was a Shell drilling engineer in the Dutch North Sea and worked as an energy consultant with Wood Mackenzie before becoming co-head of Goldman Sachs energy equity research in 2000. He joined Investec Global Energy in 2008 where he helped grow the energy franchise at Investec to a peak of nearly $3.5bn in 2011. Jonathan joined Guinness Asset Management in 2013

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