

## Investment Strategy for Pension Actuaries Seminar 11 April 2008, London

Investing in Commodities

**Eleanor de Freitas**  
Barclays Global Investors

### Investing in commodities Agenda

- The case for commodities
  - Performance characteristics
  - Relationship with other asset classes
  - Growth in institutional investment
- Practical implementation considerations
  - Components of return
  - Evaluating and selecting a benchmark
- Current market backdrop
  - 2007 performance review
  - Outlook for 2008



BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

### Why commodities? The case for investing

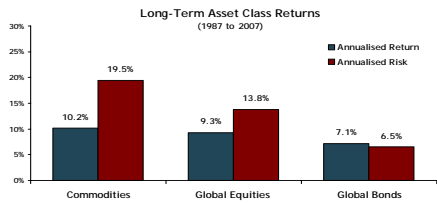
- Delivered **strong** historic **returns**
  - Similar risk-return profile to equities
- Relatively **independent** from equities and bonds
  - Uniquely low historic correlation with financial assets
- Portfolio **diversification** benefits
  - Can improve overall portfolio efficiency
- Event **risk protection**
  - Relatively resilient during extreme economic and geopolitical shocks
  - Hedge against rising inflation

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Historic commodities performance

### Long-term risk/return profile



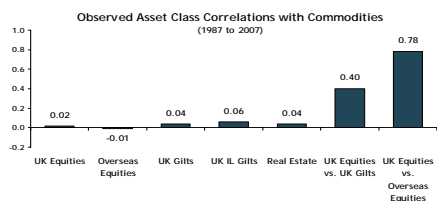
Source: DataStream and BGI. Monthly time-series of S&P GSCI TR Index (Commodities), MSCI Developed World (Global Equities), and Citigroup World Global Bond Index (Global Bonds) in US\$ from December 1987 to December 2007. Past performance is not a reliable indicator of future results.

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Historic commodities correlations

### Uniquely low correlation with other asset classes



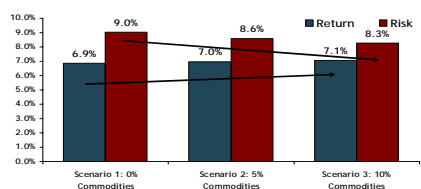
Source: DataStream and BGI. Monthly time-series of S&P GSCI TR Index (Commodities), FTSE All-Share (UK Equities), FTSE World x UK (Overseas Equities), FTSE All-Share Index (UK Gilts), FTSE Index Linked Gilts Index (UK IL Gilts) and FTSE Real Estate Index (Real Estate) in US\$ from December 1987 to December 2007. Past performance is not a reliable indicator of future results.

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Commodities in a portfolio context

### Improving return while reducing risk



Source: BGI, Datastream, and Mercer. 10 years of monthly starting total returns to Dec. 2007 based on quarterly AA rebalancing. Scenario 1 based on 2007 Mercer Pension Fund Asset Allocation Survey of UK clients and BGI Consensus Fund weights for equities and bonds.  
Scenario 1: 61% equities, 39% fixed income and cash, 0% alternatives.  
Scenario 2: 56% equities, 36% fixed income and cash, 0% alternatives, 5% GSCI.  
Scenario 3: 51% equities, 36% fixed income and cash, 0% alternatives, 10% GSCI.

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Historic event risk protection

### Diversification when it matters

- Commodities have held up well during periods when equities have suffered
- Global equities have fallen by > 5% in 18 quarters since 1970
- Commodities outperformed equities in every one of these quarters
  - Delivered an average return of 7%
  - 19% higher than global equities on average
- Commodity markets have their own fundamental drivers

Source: DataStream and BGI as of 29 February 2008. Monthly time series of S&P 500 TR Index (Commodities), MSCI Developed World (Equities) in USD. Past performance is not a guide to future returns.

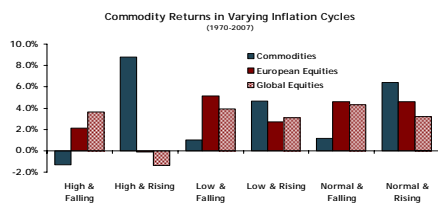
Quarter	Commodities	Equities	Comments
Q2 1970	3.6%	-16.9%	
Q4 1973	10.1%	-12.6%	1973 Oil Crisis
Q2 1974	6.0%	-8.3%	US recession
Q3 1974	32.0%	-22.8%	UK recession
Q3 1975	19.5%	-10.8%	
Q3 1981	1.0%	-10.5%	US Recession
Q1 1982	9.5%	-9.7%	US Recession
Q2 1984	-0.6%	-6.9%	
Q4 1987	-1.8%	-15.4%	Black Monday
Q1 1990	0.0%	-14.2%	
Q3 1990	55.2%	-18.1%	Gulf War
Q1 1992	2.9%	-8.0%	Gulf War
Q3 1998	-4.4%	-11.9%	Asian/Russian Crises
Q4 2000	7.2%	-6.1%	Dot Com Crash
Q1 2001	-10.3%	-12.8%	Dot Com Crash
Q3 2001	-9.9%	-14.3%	9/11 Crash
Q2 2002	0.0%	-9.0%	Dot Com collapse
Q3 2002	11.5%	-18.3%	Dot Com collapse
Q1 2008	11.2%	-8.1%	Credit crisis

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Business cycle diversification

### Commodities as a hedge for inflation



Source: DataStream and BGI analysis. Average quarterly returns of S&P 500 TR Index (Commodities), MSCI Europe (European Equities) and MSCI World (Global Equities) in USD from 1970 to 2007. Inflation is measured by the US CPI inflation rate. High inflation quarters are those above the 70th percentile over the 38 year period and low inflation is quarters below the 30th percentile. Past performance is not a reliable indicator of future results.

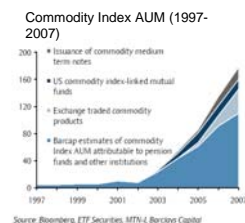
BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Institutional investment in commodities

### Growing interest in the asset class

- Institutional investment in commodities has grown substantially
- An estimated \$180 bn invested in commodities strategies
- Many large pension funds have a 1-5% commodities allocation\*
- Diversification and event protection are key motivations for investing



\*Source: Based on estimates from Barcap Capital as of February 2007. In a survey conducted on the 150 attendees at their annual commodities investment conference they found that 37% of investors had a 1-5% allocation to commodities in their portfolio.

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Practical implementation of an investment in commodities

### Sources of return in a commodities investment More than just commodity prices

- Direct investment in commodities is not practical
  - Cannot hold what you cannot store
- Investors use exchange traded futures to gain access to commodities
  - Hold a basket of fully collateralised commodities futures
- Total return of a commodities investment has three sources
  - Price Return  
and
  - Roll Return  
and
  - Cash Return

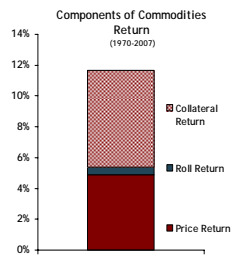


BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

### Components of commodities return Combination of performance drivers

- Price (Spot) return
  - Economic factors
  - Sentiment
- Roll return
  - Convenience
  - Cost of carry
  - Inventory levels and tightness
- Collateral return
  - Interest on cash investment



Source: BGI and Datastream. Based on annualised returns of the S&P 500 Price, Futures and Total return indices from 1970 to 2007.

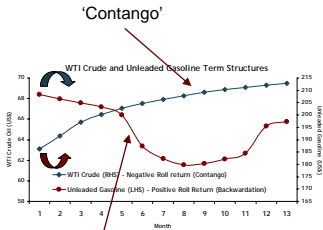
BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

# Roll returns

## Defining the concept

- Commodity futures contracts need to be 'rolled' regularly
- Sell the 'near' dated contract before it expires
- Buy a 'far' dated contract to maintain exposure
- Any price difference between the 'near' and 'far' contracts creates a positive or negative return – the 'roll return'



Source: Bloomberg as of April 2007. Past performance is not a reliable indicator of future results and is no guide to future returns.

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

---

---

---

---

---

---

---

---

---

---

# Selecting a benchmark

## Evaluating the alternatives

- Growing popularity of commodities
  - Increase in index providers
- Main and most popular indices that measure 'investor returns' are
  - Dow Jones-AIG Commodity Index (DJ-AIG)
  - S&P Goldman Sachs Commodity Index (S&P GSCI)
- Both indices broadly meet key criteria for a good index
- Representation and objectivity are main differentiators

	S&P GSCI	DJ-AIG
Representative of the asset class	✓✓	✓
Investible (e.g. viable investment)	✓✓	✓✓
Disciplined & objective construction rules	✓✓	✓
Based on publicly available information	✓✓	✓✓
Acceptable as the neutral position	✓✓	✓
Consistent with status of investor	✓✓	✓✓

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

---

---

---

---

---

---

---

---

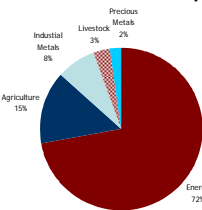
---

---

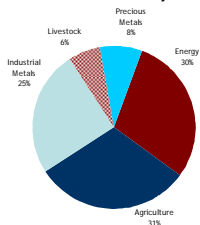
# Comparison of benchmarks

## Differences in representation

S&P Goldman Sachs Commodity Index



Dow Jones-AIG Commodity Index



Which index best captures the unique characteristics of the asset class?

Source: S&P Goldman Sachs, Dow Jones, and BGI. Data as at February 2008.

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

---

---

---

---

---

---

---

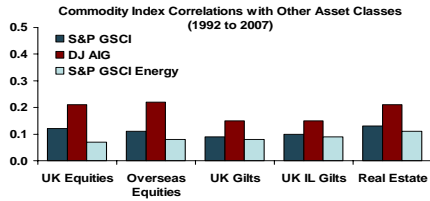
---

---

---

## Diversification characteristics of indices

Energy has been a strong diversifier



Source: DataStream and BGI. Monthly time-series of S&P GSCI TR Index (Commodities), FTSE All Share (UK Equities), FTSE World x UK (Overseas Equities), FTSE All Gilts Index (UK Gilts), FTSE Index Linked Gilts Index (UK IL Gilts) and FTSE Real Estate Index (Real Estate) in US\$ from 1992 to 2007. Past performance is not a reliable indicator of future results.

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Gaining exposure to commodities

Commodity access routes

- Exchange Traded Index futures
  - S&P GSCI® index futures are useful as a portfolio management tool, but are not ideal for a large long-term investment
- Basket of commodity futures
  - Requires time and skill to manage positions, trading expertise and is operationally complex
- Over-the-Counter Derivative (Swap)
  - Total and Excess Return Swaps can provide a **guaranteed return**, but providers will charge a 'spread' for the service
- Commodity fund
  - Will be implemented using one or a combination of the above instruments

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Current commodities market backdrop

The Actuarial Profession  
making financial sense of the future

## Commodities outperform in 2007

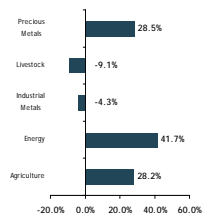
One of the years top performers

2007 Major Asset Class Returns



Source: S&P GSCI, Datastream and BGI Analysis. Returns of S&P GSCI TR Index (Commodities), MSCI World (Global Equities), MSCI Europe (Eur Equities), Citigroup WGB (Global Bonds), FTSE Hedge Fund Index (Hedge Funds) & FTSE EPRA/NAREIT Global (Real Estate). Past performance is not a reliable indicator of future results.

2007 Commodity Sector Returns



Source: S&P GSCI, Datastream and BGI Analysis. Returns as of 31/12/2007. Past performance is not a reliable indicator of future results.

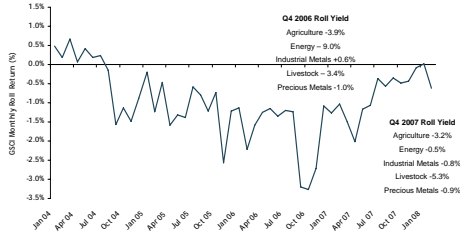
BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Contribution of roll yield

Roll returns negative but improving

S&P GSCI Monthly Index Roll Yield



Source: S&P GSCI and Barclays Global Investors Analysis as at 29 February 2008. Past performance is not a reliable indicator of future results and is no guide to future returns.

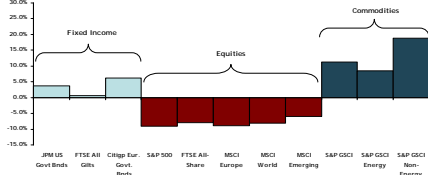
BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## 2008 – the story so far.....

Diversification benefits clearly evident in 2008

Year to Date 2008 Asset Class Returns



Source: Barclays Global Investors & Thompson Datastream (31 December 2007 to 29 February 2008). Based on total return indices in US\$. Past performance is not a reliable indicator of future results and is no guide to future returns.

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Commodities market backdrop

### Risks skewed to upside?

- Factors that could support further **upside**
  - Many commodities still trading below their inflation-adjusted all-time highs
  - OPEC policies are price supportive, declining output and fewer discoveries from Non-OPEC producers
  - Transport, logistics, equipment and skills shortages
  - Inventories for many commodities at all-time lows, consumptions at all-time highs
  - Over 70% of the S&P GSCI currently produces a positive roll yield
  - Inflation and US Dollar concerns
  - Geopolitical and weather risk remain omnipotent
  - 'Investor' demand is expected by many to remain strong
- Drivers that could impact returns on the **downside**
  - 'Concerns' about a US-led, global economic slowdown
  - Concern about high prices for some commodities
  - Increases in OPEC supply could put downward pressure on oil prices
  - Industrial metal inventories are rising



BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future

## Regulatory information

Barclays Global Investors Limited ('BGIL'), which is authorised and regulated by the Financial Services Authority ('FSA') in the UK, has issued this document for access by Professional Clients in the UK only and no other person should rely upon the information contained within it.

This document concerns investment strategies and does not purport to disclose details about any particular existing funds. This document is accordingly provided for informational purposes only and does not constitute investment advice.

Any distribution, by whatever means, of this presentation to persons other than to the intended recipient is strictly prohibited. This document is not intended for public use or distribution.

© 2008 Barclays Global Investors Limited. Registered Company No. 00796793. All rights reserved.

BARCLAYS GLOBAL INVESTORS

The Actuarial Profession  
making financial sense of the future