

# Pioneer Funds – Commodity Alpha

## Commodities

### Investment Philosophy

Inventory theory predicts higher expected returns by selecting commodities based on the dynamics of inventory levels.

When inventories are low, the buffer function of inventories to absorb shocks is reduced. Inventories can only be restored through the, at times, lengthy process of new production. An increase in the risk premium is likely to persist for a longer period and commodity spot prices will rise as a result.

We use high spot prices and the relative steepness of the futures curve as indicators of inventory levels. We believe an increase in current prices signals the scarcity of a commodity today, whilst a downward sloping futures curve (also called backwardation) signals expectations that inventories will be restored over time and that spot prices will return to ‘normal’ levels.

A widening of the futures basis (the price difference between the first and second futures contracts) and a steeper futures curve, coupled with high spot prices, are therefore indicators of the relative scarcity of a commodity. Inventory theory shows that these indicators are correlated positively with expected returns of commodity futures.

### Investment Process

There are three key elements to our investment process as shown in the diagram below:

Step 1: Identification of Alpha Sources	Step 2: Portfolio Construction	Step 3: Implementation
<ul style="list-style-type: none"> <li>→ Our investment philosophy</li> <li>→ Long / short positions to exploit our investment philosophy efficiently</li> <li>→ Investment in smaller commodities</li> <li>→ Active allocation between different strategies</li> </ul>	<ul style="list-style-type: none"> <li>→ Approach is fundamentally driven</li> <li>→ Dynamic asset allocation is made in five underlying commodity indices</li> <li>→ Each index is a potential reflection of identified alpha sources</li> </ul>	<ul style="list-style-type: none"> <li>→ Majority of portfolio is held in USD money market instruments, bonds, convertible bonds, bonds with warrants, other fixed-interest securities (including zero coupon bonds)</li> <li>→ Index swaps are used to provide exposure to the five commodity indices</li> <li>→ ‘Cash’ portfolio is used as collateral against swaps</li> </ul>

### Key Features

The Commodity Alpha strategy provides investors with:

- The potential to generate strong returns from the investment opportunity of commodities, without investing directly in single commodities
- An active quantitatively managed strategy that exploits changes in commodity inventories to identify attractive investment opportunities
- Active allocation between different strategies to optimise performance potential
- A dedicated portfolio management team, supported by specialist in-house quantitative analysts
- Exposure to commodities via the futures market rather than direct investment
- An investment with low correlation to traditional asset classes, offering significant diversification benefits.

### Key Facts

- **Lead Portfolio Manager:** Peter Königbauer
- **Reference Index:** Dow Jones-UBS Commodity Index
- **Investment universe:** 31 commodities in total, with the opportunity to invest in 12 off-benchmark commodities
- **Dealing and valuation:** Daily
- **Currency of underlying assets:** USD

Investment Universe		
DJ-UBS Commodity Universe	DJ-UBS Commodity Universe	Smaller Commodities
Crude oil Unleaded gasoline Heating oil Wheat Soya beans Soya bean oil Copper Gold Silver Corn Natural gas Live cattle	Lean hogs Aluminium Zinc Nickel Sugar Cotton Coffee	Crude oil Brent Gas oil Soya bean meal HRW wheat HRS wheat Lead Tin Platinum Palladium Feeder cattle Cocoa Orange juice

Our investment universe consists of 31 commodities, comprising the 19 commodities in the Dow Jones-UBS Commodity Index as well as 12 smaller commodities outside this universe. We do not invest directly in single commodities; rather we gain exposure to movements in commodity prices through the commodity futures market.

**Step 1: Identification of Alpha Sources**

We exploit four different alpha sources to enhance the performance potential of our investment strategy. These are:

**Alpha Opportunity 1: Implementing the Investment Philosophy**

We believe that movements in inventory levels signal a change in the future price performance of different commodities. The two key indicators of this are a change in the spot price of a commodity and the steepness of the futures curve for this commodity. We exploit this in two ways:

*Relative Strength strategy:* The Dow Jones-UBS Commodity universe is ranked on a monthly basis in order of momentum as measured by the previous 12 months’ return. We believe that the stronger the historical momentum, the lower the inventory levels are relative to other commodities. We go long the nine commodities with the highest momentum, with the same relative weights as in the Dow Jones-UBS Commodity Index (subject to constraints).

*Basis strategy:* The Dow Jones-UBS Commodity universe, excluding gold and silver, is ranked on a monthly basis in order of basis. Basis measures the steepness of the future curve or the difference between the price of the nearest future contract and the price of the following contract. We believe that the higher the difference, the scarcer a commodity is. We go long the eight commodities with the highest basis, with the same relative weights as in the Dow Jones-UBS Commodity Index (subject to constraints).

**Alpha Opportunity 2: Extending the Investment Philosophy’s Return Potential**

Our investment philosophy predicts that those commodities where inventories are low, will deliver higher expected returns relative to commodities where inventories are at normal or high levels. We exploit this by going long those commodities with the lowest inventories and short those commodities with the highest inventories. We do this in two ways, in line with our investment philosophy:

*Relative Strength Long / Short strategy:* The Dow Jones-UBS Commodity universe is ranked on a monthly basis in order of momentum as measured by the previous 12 months’ return. We take a long position in the nine commodities with the highest momentum and a short position in the nine commodities with the lowest momentum, with the same relative weights as in the Dow Jones-UBS Commodity Index (subject to constraints).

*Basis Long / Short strategy:* The Dow Jones-UBS Commodity universe, excluding gold and silver, is ranked on a monthly basis in order of basis. We take a long position in the eight commodities with the highest basis and a short position in the eight commodities with the lowest basis, with the same relative weights as in the Dow Jones-UBS Commodity Index (subject to constraints).

**Alpha Opportunity 3: Smaller Commodities Strategy**

Smaller commodities offer a source of potential additional return outside the traditional commodities universe. This strategy provides at least a partial exposure to some of the less heavily traded commodities, which may provide additional alpha potential. We have identified 12 smaller commodities in energy, metal and agriculture, which are the next set of commodities that did not make it into the Dow Jones-UBS Commodity Index, based on liquidity and production volumes. The split between the different commodities is 30% energy, 16% metal and 54% agriculture. These commodities have been bundled into an index, with 2006 liquidity levels used to determine the single commodity weights. These are capped at 15%, while the lowest weighting of a single commodity in the index is 2%. The construction of the index is reviewed and rebalanced annually.

**Alpha Opportunity 4: Active Allocation Between Different Strategies**

Active allocation between the different strategies aims to optimise performance potential. We make an active strategy selection based on historical scenario analysis. The portfolio’s exposure to the five underlying strategies can change considerably over time, depending on the prevailing market conditions. The underlying long-only strategies (Basis, Relative Strength and Small Caps) provide a full market exposure. These strategies

should perform best during positive market phases. The underlying long-short strategies (Long / Short Basis and Long / Short Relative Strength) offer market neutral strategies and therefore provide a hedge in negative market phases.

The allocation to the five different strategies is driven by the historic price momentum of the Dow Jones-UBS Commodity Index as a proxy for the asset class commodities. We have identified four different market phases, using 15 years of historical data. Depending on the market phase, we determine an optimised blend of the five strategies in terms of risk and reward. The evaluation of current market scenario, and subsequent allocation, is undertaken on a monthly basis and involves no additional transaction costs.

### Step 2: Portfolio Construction

Our investment approach is fundamentally driven. We implement our approach through the dynamic asset allocation into five commodity indices, with each index representing one of the underlying strategies explained above. An external service provider constructs these indices, which allow for efficient execution of our investment approach.

We will not hold more than 20% in a single commodity within an index, which means in practice that we would not hold more than 20% in a single commodity across the portfolio, given our guideline portfolio construction limits. In addition, long / short strategies are limited to a combined weight of 30%.

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All models are reviewed semi-annually and we would only adjust our approach if we see an opportunity to enhance investment returns, identify a structural change or experience significant deviation from expected returns.

Portfolio Construction Guideline Limits	
Dow Jones-UBS Commodity Basis Total Return Index	0-50%*
Dow Jones-UBS Commodity Relative Strength Total Return Index	0-50%*
Dow Jones-UBS Commodity Relative Strength Long / Short Total Return Index	0-20%*
Dow Jones-UBS Commodity Basis Long / Short Total Return Index	0-20%*
Dow Jones-UBS Commodity Small Caps Total Return Index	5-15%*

\*Note: these are internal guidelines and not prospectus limits and may be subject to change over time.

### Step 3: Implementation

- i) We invest in a portfolio of US dollar denominated short-term money market investments. The portfolio invests in investment grade instruments with an average duration of between three to six months.
- ii) We use this ‘cash’ portfolio as collateral against investing in five swap contracts, which provides exposure to each of the five commodity indices.
- iii) Each of the five indices invests in long or short commodity future contracts, depending on the underlying strategy.

The total return of the portfolio comprises the performance return from each of the five strategies minus swap fees, and the interest earned from the collateral minus the total expense ratio.